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Environmental Impact Statement

NEWMAN
WATERSHED
PROJECT

Stanislaus County,

California

United States Department of Agriculture
Soil Conservation Service



April 1976

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Stanislaus County, California

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FINAL ENVIRONMENTAL IMPACT STATEMENT

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Sponsoring Local Organizations

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April 1976

PREPARED BY

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USDA ENVIRONMENTAL IMPACT STATEMENT

Newman Watershed Project
Stanislaus County
California

Prepared in Accordance with Sec. 102(2)(c)
of Public Law 91-190

Summary Sheet

- I. Final
- II. Soil Conservation Service
- III. Administrative
- IV. Project Purpose and Action

A project for watershed protection and agricultural drainage in Stanislaus County, California to be implemented under the Watershed Protection and Flood Prevention Act (PL-566, 83rd Congress, 68 Stat.666), as amended.

- V. Summary of Environmental Impacts

Project action will lower a high water table on about 3,030 acres; improve the physical condition of the soil for better aeration and infiltration; improve the crop root environment; remove excess soluble salts from the soil; reduce health hazards caused by wet basements, poor septic tank operation, and mosquito population increases; reduce damage to foundations and roads; increase crop yields and permit a return to more intensive agriculture; increase employment opportunities and farm incomes; provide about 0.9 miles of open channel with water suitable for warm-water fish and suitable habitat for a rare snake species; provide plantings along the channel, offering wildlife cover and improved fire control; improve rangeland management; contribute about 8,000 tons of dissolved salts per year to the San Joaquin River; temporarily remove about 127 acres of agricultural land from production; create temporary disturbances during construction; induce increases in vehicular traffic, waste products, and energy consumption resulting from more intensive agriculture; and lead to a reduction in the quality of wildlife habitat on farmland as a result of the intensified agriculture. Dissolved salts added to the San Joaquin River will conform to water quality standards set by the Central Valley Regional Water Quality Control Board.

VI. Alternatives Considered

1. Changing the land use from agriculture to wetland.
2. Continue farming with the high water table.
3. Conservation land treatment alone.
4. Construction of a system of open channels instead of subsurface drains throughout the problem area.
5. Construction of a pipeline instead of an open outlet channel at the downstream end of the system.
6. Alternative methods for disposal of the drainage effluent, such as treatment, evaporation, or temporary storage.
7. Postponing of the project until master drainage facilities become available.

VII. Agencies From Which Comments Have Been Received

Department of the Army
Department of Health, Education, and Welfare
Department of the Interior
Department of Transportation
Environmental Protection Agency
Advisory Council on Historic Preservation
California Office of Planning and Research
 (State Clearinghouse)
Stanislaus Area Association of Governments
 (Areawide Clearinghouse)

VIII. Draft Statement Transmitted to CEO on May 22, 1975.

PROJECT IDENTIFICATION AND ENVIRONMENTAL SETTING

USDA SOIL CONSERVATION SERVICE FINAL ENVIRONMENTAL IMPACT STATEMENT

for

Newman Watershed Project, Stanislaus County, California

Installation of this project constitutes an administrative action. Federal assistance will be provided under authority of Public Law 83-566, 83rd Congress, 68 Stat. 666, as amended.

SPONSORING LOCAL ORGANIZATIONS

Orestimba Resource Conservation District
Newman Drainage District

PROJECT PURPOSES

The purpose of the project is to improve soil and water management practices so as to achieve adequate treatment of the land in the watershed. The major need is to relieve an induced high-water-table problem on an area of about 3,030 acres. ^{1/} Lowering of the water table will permit the application of conservation land treatment measures to maintain the quality of the agricultural land and will reduce local public health hazards. Specific objectives of the sponsors are as follows:

1. Return the land to its historic cropping pattern, thereby removing the trend towards low-income-producing crops.
2. Reduce the shrink-swell of soils caused by poor drainage conditions, which is leading to problems with home and other building foundations, roads, and other land-surface improvements.
3. Reduce public health problems by draining saturated soils around septic tanks and leach-line fields and by eliminating conditions conducive to mosquito breeding.
4. Improve economic employment opportunities and return the area to a viable rural setting.

All of these objectives are associated with the existing high groundwater conditions and can be met to varying degrees by installing a subsurface drain collector system combined with on-farm treatment and management measures.

^{1/} All information and data, except as otherwise noted, were collected during watershed planning investigation by the Soil Conservation Service, United States Department of Agriculture.

PLANNED PROJECT

The sponsors propose to solve the high groundwater problem by applying corrective land treatment and structural measures. The project will include facilities to collect and dispose of excess subsurface water and accumulated salts, and other conservation practices to improve farming operations and help obtain the full potential benefits from the project.

Land Treatment Measures

On-farm subsurface drains to lower the water table will be installed throughout the problem area. Approximately 164,000 feet are expected to be installed during the project installation period. These will permit salt reduction, leaching to reduce harmful concentrations of salts in the soil, to be carried out. Salt reduction will be required on approximately 1,000 acres.

As the water table drops and the cropping pattern changes, other measures to improve land and water management and production efficiency will be applied. Typical measures to improve water management will include irrigation land leveling, surface and subsurface irrigation systems, irrigation water management, about 36,000 feet of irrigation pipelines, about 6,000 feet of irrigation ditch lining, and about 30,000 feet of drainage field ditches. Typical measures to improve and maintain the soil condition include the following:

Chiseling--Loosening the soil without inverting, and with minimum of mixing of the surface soil, to shatter restrictive layers below normal plow depth that inhibit water movement or root development.

Conservation cropping system--Growing crops in combination with needed cultural and management measures.

Crop residue management--Using plant residues to protect cultivated fields during critical erosion periods.

Such measures will also be applied on cropland outside the problem area.

Typical measures to be applied on rangeland include range seeding, proper grazing use, spring development and pond construction. Firebreaks and fences will also be installed where needed.

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These measures or other suitable alternatives and combinations will be installed as needed to achieve adequate treatment. The measures will be applied on private land by the individual farmers. The Soil Conservation Service will provide technical assistance to those farmers for planning and applying the measures.

Structural Measures

To permit the land treatment program in the problem area to be carried out, structural measures will be installed to collect and dispose of the effluent from the on-farm tile drains. The locations of these measures are shown on Figure 1. Detailed plans are included in the Engineering Appendix to the Watershed Work Plan.

The collection system will consist of about 10.1 miles of open-joint pipe and appurtenant structures such as vents and junction boxes. The system will provide an outlet for each farm unit in the service area. The pipes will be installed with invert depths about nine feet below the ground surface. The use of tile-laying machines will be the preferred method of installation where pipe diameters are small enough for the machines to be used. Pipe sizes are based on a drainage coefficient of 0.0038 cubic feet per second per acre. The collection system includes all lines within the boundaries of the service area.

The disposal system will consist of about 0.4 miles of closed-joint pipe and about 0.9 miles of open channel. The system will convey the drainage effluent from the problem area to the San Joaquin River. The pipeline will carry flows from line A to an existing overflow slough of the river. The open channel, shown as line I on Figure 1, will carry flows from lines B, G, and H across the river's floodplain to its main stream. An eight-foot diameter sump will be installed at the junction of lines B, G, and H, with a gated entrance to the channel. The sump will include provision for a portable pump to be used at times when the river level is above the subsurface drain lines.

A permanent easement thirty feet wide will be acquired for all subsurface lines. An additional seventy feet of width will be acquired for a temporary easement during construction. A total of about 38 acres of permanent easement and 89 acres of temporary easement will be required for these lines. Construction of the subsurface drain lines will also require nine road crossings and eight irrigation canal crossings. One gas line will be crossed, but will not require modification.

Spoil material along the subsurface lines will be placed or spread in a manner that will prevent ponding of surface runoff. Small temporary drain ditches will be provided as needed to carry runoff at non-erosive velocities to existing channels.

An open channel will be constructed to carry the effluent from lines B, G, and H to the San Joaquin River. It will be a new channel, across land that is presently in native dryland pasture. The channel will have a design water depth of about 1.3 feet, but the total depth will average about ten feet, so that the channel bottom will be at the level of the subsurface drains. The channel will have 1.5 to 1 side slopes and an average top width of about 36 feet. A gravel-surfaced maintenance road will be provided along one side of the channel. The channel will require about 11.5 acres of land to be acquired in fee title, and will include one road crossing, a culvert at River Road.

Excavated material will be placed in a spoil bank adjacent to the channel. The spoil bank will average about eight feet in height, with a 15-foot top width and side slopes of about two to one. Drainageways through or around the spoil banks will be provided to convey local runoff to the channel.

The channel will be designed to flow at non-erosive velocities, approximately one foot per second. The channel and spoil bank will also be vegetated to improve their appearance and prevent erosion and rilling of the slopes. About nine acres of grasses and shrubs will be planted.

The land treatment program will be carried out over a ten-year period. Land treatment measures in the problem area will generally be installed after the structural measures. Some of the on-farm tile drains will be installed concurrently with the structural measures. As the water table is drawn down, measures for salt reduction can be applied. Other land treatment measures required to achieve project benefits will be applied as the change in cropping pattern occurs. It is estimated that the transition will take ten years.

On-farm land treatment measures will be installed by the individual landowners and operators. The Orestimba Resource Conservation District will provide assistance and encouragement to assure the installation of the measures shown in the plan. The Soil Conservation Service will continue its going program of technical assistance to the Orestimba Resource Conservation District, and will provide additional technical assistance to accelerate the rate of installation of land treatment measures during the project installation period.

Installation of the structural measures will be the responsibility of the Newman Drainage District. The measures will be installed over a three-year period, generally in accordance with the

following schedule:

<u>Year</u>	<u>Preparation of Designs, Plans, & Specifications</u>	<u>Aquisition of Land Rights</u>	<u>Construction</u>
1	Open channel, sump, and lines A,A-1,A-2,A-3, B & H.	Open channel and sump.	Open channel and sump.
2	Lines C, D, E, E-1, and F.	Lines A,A-1, A-2, A-3, B and H.	Lines A, A-1, A-2, A-3, B and H.
3	Lines F-1, F-2, G & G-1.	Lines C, D, E, E-1, F, F-1, F-2, G, & G-1.	Lines C, D, E, E-1, F, F-1, F-2, G, & G-1.

Contractors will be required to follow applicable guidelines and laws and regulations to minimize soil erosion and water, air and noise pollution during construction. Water or other suppressants will be used as needed to control dust. Runoff from construction sites will be disposed of in a manner that will minimize erosion. Measures such as temporary sediment basins will be used where needed to keep silt from excavations out of the San Joaquin River.

Although there are no presently known archaeological values in the construction area, the Soil Conservation Service will be alert to the possibility of unearthing such values. If evidence of cultural values is discovered during detailed investigations or construction, the Service will contact the District Clearinghouse of the Society for California Archaeology and the National Park Service, and the procedures of PL 93-291 will be followed. Since this is a federally assisted local project, there will be no change in the existing responsibilities of any federal agencies under Executive Order 11593 with respect to archaeological and historical resources.

No persons, businesses or farm operations will be displaced by the project.

An establishment period will be used to allow time for any latent defects or design deficiencies in the structural measures to reveal themselves. The establishment period for each measure will extend three years from the date the structure is accepted from the contractor as completed. The establishment period for vegetative work associated with a structural measure will last until one of the follow-

ing conditions is met:

1. Adequate vegetative cover is obtained.
2. Two growing seasons have elapsed after the initial installation of the vegetative work.
3. The establishment period for the associated structure ends.

The Newman Drainage District will be responsible for assuring compliance with all appropriate laws and regulations and will obtain all needed permits from the several state agencies concerned with the project. The District will file a report of waste discharge with the Central Valley Regional Water Quality Control Board at least 120 days before the start of construction. The District will also obtain a permit from the State Reclamation Board before constructing any works that discharge into the San Joaquin River.

After the project is constructed, effluent from the drainage system will be carried to the San Joaquin River. Flows from this river pass through the Sacramento-San Joaquin Delta and San Francisco Bay to the Pacific Ocean. Water quality standards for the river are being developed by the Central Valley Regional Water Quality Control Board. The Newman Drainage District will operate the project and will be responsible for meeting the water quality standards and the requirements for monitoring that are set by the Board. The initial monitoring requirements will include discharge, suspended solids, and specific conductance. Frequency of sampling will also be specified. The Soil Conservation Service will furnish technical assistance for installing land treatment measures and will encourage farmers to use good management in applying agricultural chemicals to minimize adverse effects on water quality. However, it is anticipated that the total dissolved solids content of the drainage effluent will still exceed the standards set for the river. The Newman Drainage District will remedy this by obtaining sufficient dilution water to make the effluent meet the standards.

Surface runoff from irrigation is expected to provide adequate dilution during the irrigation season. This runoff reaches the San Joaquin River via the Eastin Road, Crow Creek, Freitas, Azevedo, and Anderson Road drains. Samples taken and analyzed by the Soil Conservation Service during project formulation showed typical quantities and qualities of surface water in the drains to be as follows:

	Discharge (cubic feet per second)	Total Dissolved Solids (parts per million)
Eastin Road Drain	20	240
Crow Creek Drain	30	320
Freitas Drain	5	600
Azevedo Drain	2	700
Anderson Road Drain	15	300

These discharges are not expected to decrease appreciably during the life of the project because irrigation efficiencies in their tributary areas already approach maximum attainable values.

When surface runoff is not adequate to dilute the drainage effluent to acceptable standards, the Newman Drainage District will purchase supplemental water from the Central California Irrigation District. Before construction is begun, the Newman Drainage District will obtain a written agreement assuring that this water will be made available at the appropriate time. The water will be conveyed to the river through existing ditches in the area. The total dissolved solids content of the water is expected to average about 350 parts per million. This figure was furnished by the Central California Irrigation District.

The salinity of the future drainage effluent was estimated to be about 1,700 parts per million. This figure is based on an unpublished study of water use throughout the San Joaquin Valley, made by the California Department of Water Resources.

The water quality control plan for the San Joaquin Basin does not list specific permissible salinity values for the reach of the San Joaquin River adjacent to Newman. The plan does specify a 30-day average total dissolved solids concentration of 500 milligrams per liter as the water quality objective for the San Joaquin River near Vernalis, where the river enters the Sacramento-San Joaquin Delta.

During the spring months, when the discharge in the San Joaquin River is large, the discharge from the project will be small, and no dilution water need is anticipated. Higher flows from the drainage system will occur from June through September. This is during the irrigation season, and surface runoff from irrigation is expected to provide adequate dilution. Therefore, the estimate of the quantity of supplemental water to be purchased was based on the amount needed to dilute the drainage effluent during October, November, and December.

For computation of the annual cost of purchasing supplemental dilution water, the allowable salinity of the diluted effluent was estimated to be 750 parts per million. Comparison with preliminary proposals indicates that this figure is compatible with the water quality control

plan. To meet this with a dilution water quality of 350 parts per million and a drainage effluent quality of 1,700 parts per million would require about 2.5 acre-feet of diluent for each acre-foot of drain effluent. Drain discharge was estimated to average about one cubic foot per second during the period from October through December. This leads to an average annual supplemental water requirement of about 455 acre-feet. Estimated operation costs are based on this figure.

A possible future means of drainage disposal is the construction of a region-wide collector and disposal system. Two such drains are the San Luis Drain, being constructed by the U. S. Bureau of Reclamation, and the San Joaquin Valley Master Drain, proposed by the State Department of Water Resources. The San Luis Drain is being built to serve the Westlands Water District, an area about 80 miles south of Newman, and does not presently extend as far north as the Newman Watershed. The Newman project measures are compatible with both of these proposed drains.

The Bureau of Reclamation has expressed its willingness to permit areas outside of its Westlands service area to use the San Luis Drain between the time it is completed and the time its full capacity is needed for the Westlands area. The Newman Drainage District will make use of this drain if possible. The Regional Water Quality Control Board intends to prohibit discharge to the San Joaquin River once a master drain has been constructed. The Board's staff has indicated that discharge to the river should therefore be considered a temporary manner of operation. Once a regional drain becomes available to the project, dilution water will no longer be needed.

Operation and maintenance of land treatment measures will be the responsibility of the individual landowners on whose properties the measures are installed. The Orestimba Resource Conservation District, with the assistance of the Soil Conservation Service, will provide the technical advice and periodic inspections necessary to assure that the measures remain effective and are properly maintained. Structural measures will be maintained by the Newman Drainage District, which will levy an ad valorem tax to obtain the needed funds.

The estimated average annual operation, maintenance and replacement cost for the structural measures is \$6,000. The cost includes \$2,300 for the labor, materials, equipment and management needed for maintaining the subsurface drains, \$2,000 for maintenance of the open channel and \$1,700 for purchase of dilution water. After the system is in operation for a number of years, the quality of drainage effluent is expected to improve, as accumulated salts are leached out

of the soil. The quantity of drain effluent is expected to decrease in the future as re-use of water to its fullest extent is realized and irrigation efficiency becomes higher. Both of those factors will mean that less dilution water would be required, resulting in a reduction in this cost.

Inspection of all completed structural works of improvement will be conducted annually and after any unusual event or condition that might adversely affect a structural measure, to determine the maintenance required. The inspection group will consist of representatives of the Newman Drainage District, the Orestimba Resource Conservation District, and the Soil Conservation Service, and may include representatives of other interested agencies. These inspections will continue for three years following the installation of each structural measure. Inspections after the third year will be made annually by the sponsors, who will prepare a report and send a copy to the Service.

Two to three years after construction is completed, the Soil Conservation Service and the Newman Drainage District will reevaluate dilution water needs. This will be done in consultation with the Regional Water Quality Control Board.

Specific maintenance agreements will be executed prior to the issuance of invitations to bid for any construction contract. An operation and maintenance plan will be prepared for each structural measure, and the maintenance agreement will refer to the SCS State Operation and Maintenance Handbook. The Newman Drainage District is fully aware of its responsibilities with regard to operation and maintenance of the project measures.

Estimated installation costs of the project are shown below:

	<u>PL-566</u> <u>Funds</u>	<u>Other</u> <u>Funds</u>	<u>TOTAL</u>
Land Treatment Measures	\$ 70,000	\$3,360,000	\$3,430,000
Structural Measures			
Construction	249,000	249,000	498,000
Engineering, Administration & Land Rights	<u>113,000</u>	<u>76,000</u>	<u>189,000</u>
Total Structural Measures	<u>362,000</u>	<u>325,000</u>	<u>687,000</u>
TOTAL PROJECT	\$432,000	\$3,685,000	\$4,117,000

ENVIRONMENTAL SETTING

Physical Resources

The watershed is located midway along the southern boundary of Stanislaus County, California, and lies entirely within this county. The watershed occupies approximately 34 square miles and extends from the foothills of the Diablo Range on the west to the San Joaquin River on the east. The City of Newman is entirely within the watershed. The county seat is at Modesto, which has a population of about 62,000 and is located about 20 miles north of the watershed. Turlock, a city of about 14,000, is located about 15 miles northeast of Newman. The watershed has about 3,200 residents, including 2,500 in the City of Newman.

The watershed is in the San Joaquin Basin Subregion of the California-South Pacific Water Resource Region. This subregion is situated in central California. It extends generally from near Stockton on the north to near Fresno on the south, and from the crest of the Sierra Nevada on the east to the coast ranges on the west. The subregion is about 110 miles long and 95 miles wide and contains an area of about 11,000 square miles. The watershed is located on the lower slopes of the west side of the basin. Climate, soils, geology, topography, and land use in the watershed are typical of much of the subregion's west side.

Within the watershed is a problem area of about 3,030 acres that has a high, saline groundwater table. This area lies between State Highway 33 and the San Joaquin River. The Drainage District boundary on Figure 1 coincides roughly with the limits of the problem area. Similar areas are found at other locations along the west side of the San Joaquin Valley. 2/

The upper half of the watershed, west of the Delta-Mendota Canal, consists of moderately sloping mountainous rangeland. The cover is primarily grass with scattered oak trees. Most of this area is in land capability class VII. It is underlain by a series of dissected marine and continental sediments that are tilted toward the San Joaquin River and chiefly of Jurassic and Cretaceous age. The foothills formed by these older sediments are flanked on the valley side by a gently dipping coarse-grained formation of

2/ Miller, R.S., and C.E. Anderson, Progress Report, Factors Affecting Drainage on the West Side of the San Joaquin Valley, USDA, Soil Conservation Service, Berkeley, California, July, 1966.

Plio-Pleistocene age that dips beneath the valley floor to form the principal aquifer of the area. This unit, the Tulare formation, includes the Corcoran clay member, which is the aquiclude that separates the groundwater body of the San Joaquin Valley into confined and free zones.

The valley portion of the watershed, which includes the problem area, consists of alluvial fan deposits derived from the streams that flow northeasterly from the Diablo Range. These streams rarely reach the San Joaquin River as through flow, but spread out on the fan where they drop their sediment loads, with water infiltrating to groundwater. The area on which this process occurs can be considered a younger alluvial fan while the interstream area and the land to the northeast which no longer receive such deposits are older alluvial fans. Texturally, the surficial soils of the two fan areas are similar and include clay, silty clay, clay loam, and loam. However, below the surface, the younger fans are generally of lighter texture; sand and gravel are important constituents of these lower deposits. There are no known mineral deposits within the problem area.

The lack of pervious strata in the relatively shallow subsurface is apparently one of the key factors in the failure of the soils of the older fans to drain applied irrigation water rapidly. The boundaries of the problem area and the soils of the fans coincide in a general way.

Soils in the problem area are dominated by the Vernalis, Orestimba, and Salado Series. ^{3/} They are very deep loams and clay loams formed in recent alluvium from sedimentary rocks, on basin rims and alluvial fans. Slopes are mostly less than one percent. The problem area includes about 1,840 acres of Class II land and 1,190 acres of Class III land, with wetness being the principal restriction. Some areas also contain appreciable amounts of soluble salts and/or sodium salts. The soils are moderately or moderately slowly permeable. They have a high water holding capacity and can be very productive.

Elevations in the watershed range from about 45 feet above mean sea level at the San Joaquin River to about 1,130 feet in the foothills of the Diablo Range. Elevations in the problem area range from 45 to 90 feet. Average annual precipitation at Newman is about 10.5 inches, with most of this occurring between November and March. ^{4/} The minimum recorded temperature is 18 degrees F.

^{3/} Department of Plant Nutrition, University of California, Davis
Soils of Westside Stanislaus Area, California, April, 1968.

^{4/} U.S. Department of Commerce, National Oceanic and Atmospheric

The average length of the growing season is 295 days.

Land use in the watershed is agricultural, except for roads, farmsteads, utility rights-of-way, the City of Newman, and a few small trailer parks located west of River Road, immediately north of Hills Ferry Road. The hills are in rangeland and the alluvial fans are in irrigated agriculture. A small area on the San Joaquin River flood plain is in native pasture. Within the problem area, about 459 acres are in pasture and the remainder is in field crops.

Present land use in the problem area and the entire watershed is as follows:

Land Use	Total Watershed		Problem Area	
	Acres	Percent	Acres	Percent
Cropland	12,540	58	2,475	82
Pasture	1,060	5	459	15
Rangeland	6,620	30	0	0
Other	1,530	7	96	3
TOTAL	21,750	100	3,030	100

There are about 75 acres of Type 9 wetlands (inland saline flats^{5/}) in the watershed. This area is located between the problem area and River Road, north of Azevedo Road and the Azevedo Drain. It has become wetland within the last ten years and is fed by surface ditches whose flows are largely irrigation runoff. There are no waterfowl wetlands in the problem area.

A number of small ephemeral streams flow out of the foothills in the upper watershed. These carry flows from an area of about 13 square miles that lies west of the Delta-Mendota Canal. They have well-defined, natural channels within the foothills, but lose their identity as they cross the alluvial fan. The largest of these streams is Bennett Creek. Flows from Bennett Creek are intercepted by the Newman Wasteway of the Delta-Mendota Canal, which carries them to the San Joaquin River. None of the natural stream channels reach the problem area.

There are a number of small, man-made drains that are in the lower watershed or nearby. These include the Eastin Road, Freitas and Azevedo Drains, which are partly within the watershed, and the Anderson Road and Crow Creek Drains, located two to three miles north of the watershed.

^{5/} For classification system see U.S. Department of the Interior, Fish and Wildlife Service, Wetlands of the United States, Circular 39, Washington, D.C., reprinted 1971.

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The Freitas and Azevedo Drains are open ditches and the other three are piped. These drains carry local runoff and runoff from irrigation, their flows eventually reaching the San Joaquin River.

Present and Projected Population

The watershed is located midway along the southern border of Stanislaus County. The Modesto Standard Metropolitan Statistical Area encompasses all of Stanislaus County. The population of the county in 1970 was 194,506. This is an increase of 24 percent since 1960. Over 80 percent of this increase was in the Modesto-Turlock Metropolitan Area. According to the projections made by the California Department of Finance, the population of the county will be approximately 314,000 by the year 2000. ^{6/} This represents a 61 percent increase for the next 30 years.

Economic Resources

All of the land within the problem area is privately owned except for the land in road and utility easements or rights-of-way. There is no state or federal land in the watershed. Within the problem area are 51 ownerships. Five of these are about one acre each, another five are two to four acres, and six are four to twenty acres. These are too small to be considered family farms. Another five owners farm a total of 450 acres within the problem area and have large holdings elsewhere. The remaining thirty ownerships are family farms, with an average size of about 80 acres.

Alfalfa is grown on 42 percent of the problem area, pasture on 15 percent, other crops on 40 percent, and non-agricultural use occupies 3 percent. The yields of the crops in the problem area are below the county average, as is shown in the following table:

Crop	Yield, (tons per acre)	
	Problem Area	County Average
Alfalfa	5.26	6.00
Corn	16.00	19.00
Green Beans	1.00	1.35
Milo	1.00	2.88
Oats	1.00	2.10
Peas	1.00	2.00
Sugar beets	17.00	26.00
Tomatoes	18.00	25.00

^{6/} Population Research Unit, Provisional Projections of California Counties to 2000, Report 74 P-1, Series D-100, Sacramento, California, January, 1974.

Land values in the problem area reflect the shift from more intensive agriculture to extensive agriculture. The current land values within the problem area are greatly depressed compared to values of nearby lands without a high water table. Typical values are as follows:

Crop	Land Value in Problem Area	Land Value Outside Problem Area
Alfalfa or row crops	\$900/ac	\$1,500/ac
Irrigated pasture	\$675/ac	\$ 800/ac
Dryland pasture	\$450/ac	\$ 750/ac

Existing transportation facilities in the watershed provide ready accessibility to other areas. Interstate Highway 5, a major north-south artery, crosses the upper part of the watershed. State Highway 33 crosses the watershed about half a mile west of the problem area and the Southern Pacific Railroad parallels this highway. Hills Ferry Road is a well-developed, heavily-traveled east-west county road connecting the watershed to State Highway 99, formerly U. S. Highway 99, which is another major north-south artery and is located about 12 miles east of the watershed. Much of the produce grown in the watershed is processed in either Turlock or Modesto. Some produce is processed in other nearby towns such as Patterson, 12 miles to the north, or Gustine, 4 miles to the south. All of these cities are agriculturally oriented and are thus influenced by changes in the economy of the watershed.

The watershed is in an area which has a history of chronic and persistent unemployment, as defined by the Public Works and Economic Development Act of 1965. California Department of Human Resources data show the following average unemployment rates for Stanislaus County:

Year	Rate (percent)	Year	Rate (percent)
1966	9.4	1970	10.6
1967	9.6	1971	11.1
1968	9.2	1972	9.8
1969	9.4	1973	10.5

Approximately 9.5 percent of the farms were classified as below the low-income level in 1969. 7/

7/ U. S. Department of Commerce, Bureau of the Census, 1969 Census of Agriculture, May, 1972.

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Plant and Animal Resources

Approximately sixty percent of the watershed is in agricultural crops. All of the problem area is in crops or irrigated pasture. Other plants found in the agricultural areas include the following:

<u>Trees</u>	<u>Ditch Bank Vegetation</u>	<u>Open Drain Vegetation</u>
poplar	Johnsongrass	pondweeds
willow	wormwood	cattails
blue gum	creeping wildrye	tules
valley oak	tall fescue	
black walnut	brome-grasses	

Plants in the foothill area of the watershed are typical of much of the west side of the San Joaquin Valley. The same is true of the vegetation along the San Joaquin River. Some of the more common species are as follows:

<u>Rangeland</u> <u>(Central Valley Grassland)</u>	<u>Grass-Oak Woodland</u>	<u>River Area</u>
annual grasses	blue oak	annual grasses & forbs
soft chess	California buckeye	salt grass
red brome	sycamore	creeping wildrye
wild oats	digger pine	valley oak
forbs	chamise	black willow
filaree	toyon	cottonwood
turkey mullein	yerba santa	buttonwillow
tarweed	flat-topped buck-	cattail & tules
	wheat	water hyacinth
	annual grasses	

Fishery resources in the watershed are limited to the Delta-Mendota Canal, the California Aqueduct, the Central California Irrigation District Canal, the San Joaquin River, and one commercial "fish-out" operation located near the river. Anadromous fish, chiefly salmon and steelhead, are an important resource in the San Joaquin River. Historically, the anadromous fish run approached 300,000 fish annually, but upstream water development has reduced it to about 3,000 fish per year. The State Department of Fish and Game, in cooperation with the

National Marine Fisheries Service and the U. S. Fish and Wildlife Service, is attempting to rebuild the salmon run to its former level. 8/

The San Joaquin River supports a warm-water fishery complex of black bass, bluegill, catfish, and carp. The Central California Irrigation District Canal seasonally supports a similar fishery but it is severely limited because the canal is de-watered during the winter months. The California Aqueduct and the Delta-Mendota Canal support a warm-water fishery consisting of catfish, striped bass, black bass, sunfish, and carp.

Other animals commonly found along the west side of the San Joaquin Valley are listed below:

<u>Foothills</u>	<u>Agricultural Land</u>	<u>River Area</u>
deer	yellow-billed magpie	mallard
quail	meadowlark	cinnamon teal
mourning dove	mourning dove	yellow-billed magpie
rabbit	skunk	sparrow hawk
ground squirrel	opposum	white-tailed kite
coyote	ground squirrel	muskrat
bobcat	pocket gopher	weasel
mountain lion	gopher snake	
(occasionally)		
golden eagle		
red-tailed hawk		
rattlesnake		

Two rare species which may be found in this part of the San Joaquin Valley are the San Joaquin kit fox and the giant garter snake. The San Joaquin kit fox is generally restricted to areas of native vegetation supporting kangaroo rats, and is not found on agricultural land. The giant garter snake is confined to areas around permanent

8/ Letter from S. R. Galler, Deputy Assistant Secretary for Environmental Affairs, U. S. Department of Commerce, to T. C. Byerly, Office of the Secretary, USDA, June 26, 1972.

fresh water. 9/ The Kit Fox is listed as rare by the State Department of Fish and Game 9/ and as endangered by the U. S. Department of the Interior. 10/ No rare or endangered plant species are listed for this area.

Recreational Resources

The California Aqueduct crosses the upper watershed, and its right-of-way is open to fishermen and bicyclists. The City of Newman includes a city park. Fishing occurs along the canals in the vicinity and at the commercial "fish-out" establishment.

Archaeological, Historical, and Unique Scenic Resources

There are no presently known archaeological, historical, or unique scenic resources in the problem area. The National Register of Historic Places lists no such places west of the San Joaquin River in Stanislaus County. 11/

An archaeological survey was made along the alignments of the proposed structural measures. 12/ A copy of the report was furnished to the State Historic Preservation Officer. Information was also requested from the Stanislaus County Historical Society and the Anthropology Department of California State University at Turlock. The latter is the District Clearinghouse of the Society for California Archaeology. No evidence of any archaeological resources was found.

Soil, Water and Plant Management Status

On-farm land treatment practices are being carried on throughout the watershed as part of the conservation program of the Orestimba Resource Conservation District. An area which includes the problem area was annexed to the District in 1965. The current status of the District's program is shown by the following statistics:

	<u>Problem Area</u>	<u>Watershed</u>
Number of Cooperators	26	65
Number of Resource Conservation Plans	19	48
Percent of land covered by agreements	55	81

9/ California Department of Fish and Game, At the Crossroads, 1974, A report on California's Endangered and Rare Fish and Wildlife, Sacramento, California, January, 1974.

10/ Department of the Interior, "Endangered and Threatened Wildlife and Plants," Federal Register, Vol. 40, No. 188, Washington, D.C., 1975.

11/ Department of the Interior, "National Register of Historic Places," Federal Register, Vol. 41, No. 28, Washington, D.C., 1976.

12/ True, D. L., Department of Anthropology, University of California, Davis, Archaeological Surveys, Newman Creek Watershed, Stanislaus County, California, September 1975.

About 65 percent of the needed conservation practices are being applied on rangeland in the upper watershed. About 55 percent of the needed practices are being applied on cropland that lies between Interstate Highway 5 and State Highway 33.

The land in the problem area is currently used for agriculture, and this is expected to continue in the future. However, the high water table is causing a change from long-lived, high-yielding, salt-sensitive field crops to short-lived, low-yielding, salt-tolerant plants. The high water table has also hampered the installation of land treatment practices. The percentages of planned practices presently applied are as follows:

<u>PRACTICE</u>	<u>PERCENT APPLIED</u>
Chiseling and subsoiling	38
Conservation cropping system	67
Crop residue management	38
Irrigation pipeline	25
Irrigation water management	7
Irrigation land leveling	50
Irrigation system, surface and subsurface	25
Irrigation ditch and canal lining	14
Drainage field ditch	75
Subsurface drain	0
Salt reduction	0

Approximately 1,100 acres in the problem area are considered adequately treated except for the installation of on-farm subsurface drains and salt reduction. These practices cannot be effectively applied until an adequate outlet system becomes available.

Projects of Other Agencies

Two major aqueducts flow southward across the watershed. One, the Delta-Mendota Canal, was constructed as part of the Central Valley Project of the U.S. Bureau of Reclamation. The other, the California Aqueduct, is part of the State Water Project. The Delta-Mendota Canal supplies water to the central part of the watershed. The State Water Project occasionally sells surplus water to users in the watershed.

The problem area receives its water from the Central California Irrigation District, via its Main Canal, which was once known as the Miller and Lux canal. The source of this water is the Mendota Pool, which is at the southern end of the Delta-Mendota Canal, about 50 miles south of Newman.

The Westlands Water District serves an area located about 80 miles to the south, using water from the California Aqueduct. The U.S. Bureau of Reclamation is constructing the San Luis Drain to serve this area. The drain will carry subsurface drainage effluent

only. This drain flows northward and presently terminates about ten miles south of the Newman Watershed, at a valley storage area known as the Kesterson Reservoir, where its flows are being stored.

At some future date, the San Luis Drain may be extended northward, crossing the watershed. If the drainage effluent from the Newman project is of sufficiently poor quality, the project may be able to discharge into the drain until its full capacity is needed by the Westlands service area. Bureau of Reclamation figures indicate that capacity may be available until the year 2005.

The State Department of Water Resources has conducted extensive studies involving the construction of a San Joaquin Master Drain, ^{13/} serving the entire valley. Such a drain, if ever constructed, would include capacity for subsurface effluent from the Newman project. The water quality management plan being prepared by the Central Valley Regional Water Quality Control Board envisions eventual construction of such a drain.

The State Reclamation Board has powers to restrain any diversion of water that will increase flows in the Sacramento or San Joaquin Rivers or their tributaries. ^{14/} Any construction of facilities discharging into these rivers requires a permit from this Board. The Board has also adopted a designated floodway for the unleveed reaches of the San Joaquin River downstream of Hills Ferry Road.

^{13/} State of California Department of Water Resources, Bulletin No. 127, San Joaquin Valley Drainage Investigation, San Joaquin Master Drain, Preliminary Edition, January, 1965.

^{14/} State of California, Water Code, Section 8598.

WATER AND RELATED LAND RESOURCE PROBLEMS

The major water resource problem in the watershed is the high water table and associated accumulation of soluble salts in the soil in the problem area. A high water table first developed after the start of irrigation from the Miller and Lux Canal (now Central California Irrigation District), around 1917. The drilling of a large number of comparatively deep irrigation wells to the west arrested the rise of the subsurface water table and in some parts of the area reversed it. When the Delta-Mendota Canal was constructed in the early 1950's, a large area of higher land lying west of the problem area was brought under irrigation. In addition, Delta-Mendota water was used to replace water from many of the wells, and pumping from these wells ceased. This resulted in a resumption of the rise of the groundwater table. This rise became noticeable around 1958 and is continuing. The water table is currently within six feet of the surface over about 80 percent of the problem area, within four feet over about 60 percent, and within 2.5 feet over about 30 percent of the area.

The high water table limits the choice of crops, shortens longevity of perennial crops and reduces yields. The water table also fluctuates, which increases the problem. The deep-rooted crops which were formerly grown in the area, such as alfalfa, tomatoes, and sugar beets, are being replaced by lower-valued crops such as milo and pasture. If the water table is not lowered, the alfalfa acreage in the problem area is expected to decrease from 1,257 acres today to about 880 acres in ten years, irrigated pasture acreage is expected to increase from 459 acres today to about 800 acres in ten years, and milo and oat acreage is expected to increase from 483 acres today to about 910 acres in ten years.

The typical life span of alfalfa in nearby areas without a high water table is about six years. Within the problem area, the life span averages about three years. As a result, more frequent replanting is required, increasing production costs.

The change to a less intensive agriculture will reduce farm incomes and the demand for farm labor. With lowered incomes, farm families will spend less for goods and services in the area, and the chronic unemployment problem will be further aggravated.

The high water table hampers the application of on-farm land treatment measures. Subsurface drains will not function and salt reduction cannot be carried out until outlet facilities are available.

Damage to structures also results from the high water table. Wetting and drying of the soil causes it to swell and shrink, leading to the cracking of building foundations. Some homes have been damaged from water seeping into basements, and some septic tanks no longer operate properly.

The high water table also produces conditions conducive to mosquito breeding. Among the species known to breed in this area is the carrier of encephalitis, which has been a serious problem in the San Joaquin Valley in the past. Over 500 cases were reported in 1952; ten percent of these resulted in fatalities and another ten percent required permanent intensive care. 15/ The continued rise of the water table and the expected change from cultivated crops to irrigated pasture will both tend to make the mosquito problem become more severe.

The native vegetation in the area west of River Road grows vigorously during the winter and spring months and dies during the summer. This results in a fire hazard to the adjacent trailer parks.

The project is in an area which has had a high unemployment rate for many years. There is a need for opportunities to reduce this rate. Approximately 15 percent of the problem area is in portions of farms using more than one and one-half man-years per year of hired labor. Another three percent of the problem area is in farms too small to be self-supporting; the remainder is in family farms. There is a need to promote rural development in the area to provide people the opportunity to remain there if they wish.

15/ Figures quoted by representatives of State Department of Public Health at interagency meeting, 1967.

RELATIONSHIP TO LAND USE PLANS, POLICIES AND CONTROLS

The Stanislaus County General Plan shows agricultural use for nearly all of the land in the problem area. Both the county plan and the City of Newman General Plan show a small industrial reserve of less than ten acres in the southwest corner of the area. The city general plan, prepared in 1964, shows minimum density residential use, limited to one dwelling per acre, for the undeveloped areas surrounding the city. The city plan does not include agriculture as a land use category. Part of the industrial reserve and some of undeveloped area included on the city plan are within the boundary of the Newman Drainage District. The project is compatible with all of these uses.

ENVIRONMENTAL IMPACT

Conservation Land Treatment

The on-farm subsurface drains will lower the water table to a depth of at least seven feet below the ground surface throughout the 3,030-acre problem area. This will permit the application of additional land treatment practices on the 2,934 acres of cropland and pasture in the area. These practices will minimize soil compaction, promote better soil aeration, and improve water intake into the soil, thus providing a better environment for crop plant roots. Toxic salt reduction will remove accumulated soluble salts from approximately 1,000 acres. The lowered water table will make possible the achievement of a salt balance within the root zone. With the improved root environment, chances for plant diseases will be reduced. Adequate treatment of the entire problem area should be achieved.

The land treatment measures applied on the cropland lying west of State Highway 33 will improve farming operations in this area. In addition, improved land and water management will reduce the amount of subsurface water entering the problem area from higher lands. This will enable the subsurface drains in the problem area to function more effectively.

The trend toward low yields and lower-valued crops in the problem area will be halted and will give way to improved agricultural production, regional income and employment. Expected increases in yields of the principal crops include the following:

<u>Crop</u>	<u>Present Yield</u> <u>(tons per acre)</u>	<u>Expected Yield with Project</u> <u>(tons per acre)</u>
Alfalfa	5.3	8.0
Corn	16.0	19.4
Tomatoes	18.0	25.6
Sugar beets	17.0	26.2
Peas	1.0	2.0

The anticipated effect of the project on cropping patterns in the problem area is as follows:

<u>Crop</u>	<u>Present Acreage</u>	<u>Estimated Acreage in Ten Years</u>	
		<u>Without Project</u>	<u>With Project</u>
Alfalfa	1,257	875	1,600
Corn	89	200	320
Beans, peas	98	65	225
Milo, oats	483	908	150
Irrigated pasture	459	800	50
Sugar beets	178	70	250
Tomatoes	30	0	311
Walnuts	16	16	16
Fallow	324	--	--
Other	96	96	108
TOTAL	3,030	3,030	3,030

Fifty-one landowners on 58 parcels will be directly benefited.

As a result of the lowering of the water table, basement wetness and unstable building foundation problems will be reduced. Septic tanks will be made operative and mosquito breeding areas will be eliminated, reducing the opportunity for incidence and spread of diseases.

The land treatment program will also lead to minor adverse effects on wildlife habitat. The change to more intensive agriculture will lower the quality of pheasant habitat on cropland. Improvements in water management will reduce the amount of irrigation runoff reaching the small Type 9 wetland area in the lower watershed. The subsurface drains will not affect the wetland as its wet condition results from surface runoff.

Application of land treatment practices on rangeland will lead to improved management of this land. Adequate treatment of all rangeland in the watershed during the project installation period is planned.

Structural Measures

The structural measures will provide outlets for the on-farm subsurface drains in the problem area. This will enable the on-farm lines to lower the water table, permitting the application of the remainder of the conservation land treatment program.

The structural measures will carry the drainage effluent to the San Joaquin River. This will increase the quantity of dissolved salts entering the river. The total dissolved solids content of the drainage effluent is expected to be about 1,700 parts per million. The drainage effluent and dilution water will

contribute an estimated 8,000 tons of salt per year to the river. This is on the order of one percent of the present average annual salt quantity carried by the river at a gage near Vernalis, about thirty miles downstream. The project's contribution to the concentration of salts at Vernalis under present conditions will range from a fraction of a percent in the spring and fall to about two percent in the late summer. Under future conditions, the project's contribution to downstream salinity will be negligible, as the annual salt outflow from the San Joaquin Basin is expected to increase to about 2.4 million tons by the year 1990. 16/

The foregoing figures are very approximate. The actual effect of the project will depend on the amount of dilution water actually used, which in turn will depend on the policies adopted by the Regional Water Quality Control Board. The project's potential contribution to degradation of downstream reaches of the river and the Sacramento-San Joaquin Delta will be limited because these policies will consider such effects. Water quality in the Delta is governed by the State Delta Standards, issued in Decision 1379 of the State Water Resources Control Board. This decision is currently being contested in court. Long-term effects of the project will depend on the availability of master drainage facilities.

Conformance to the standards will also minimize the project's impact on fish in the river. The anadromous fish in the river will tolerate salinities considerably in excess of the proposed standards.

Much of the dilution water will enter the river via Orestimba Creek, about five miles downstream of the project outlets. Thus, full dilution will not occur in this five-mile reach of the river. There appear to be no recent records of base salinity levels in this reach, but a review of earlier published data 17, 18/ indicates that the impact of the project will be minimal. There are no known users taking water out of this reach of the river at the present time.

The quality of the drain effluent will improve in the future, as a salt-balance is approached.

16/ State of California, Department of Water Resources, Bulletin No. 127-74, Status of San Joaquin Valley Drainage Problems, December 1974.

17/ U. S. Geological Survey, Quality of Surface Waters of the United States, 1962, Water Supply Paper 1945, Washington, D.C., 1964.

18/ U. S. Geological Survey, Quality of Surface Waters of the United States, 1963, Water Supply Paper 1951, Washington, D.C., 1966.

Carrying out the proposed project measures will permit more effective use of fertilizers and soil amendments within the area and thus reduce fertilizer losses to leaching. Split applications of nitrogen according to crop needs, rotation of shallow and deeprooted crops, and more bountiful harvests should all contribute to increased efficiency in using applied nitrogen, thus tending to decrease nitrogen losses in drainage effluent from the area.

The project will carry the drainage effluent to the river at two defined locations. This will facilitate any future monitoring program that might be undertaken.

The nine acres of grasses and shrubs along the 0.9 mile-long open channel and spoil bank will provide cover and habitat for birds and small game. The continuous flow of the channel will provide an area where catfish and other warm-water fish can live.

The open channel will occupy approximately 11.5 acres of land. This land is presently in native dryland pasture and is used as cattle feed and as a place to hold dry dairy cows. The plantings along the channel will be less susceptible to fires than the native vegetation. The firebreak effect of the channel will reduce the hazard to the adjacent trailer parks.

The project will not affect the habitat of the rare San Joaquin kit fox. The open channel may provide additional habitat for the giant garter snake, also a rare species.

While the project is being installed, environmental values will be temporarily disturbed by equipment noise, movement and stockpiling of earth during drain installation, and other effects of construction on wildlife and on fish in open drains. In addition, approximately 127 acres will be temporarily removed from production.

Economic and Social

The economy of the area will be improved by increased income and the stabilization of employment. The increased income from more intensive land use will make the family farm better able to compete as an employment possibility for labor. The underemployment of human resources will be reduced. An estimated total of 17.5 man-years per year of direct permanent employment will be provided in the agricultural sectors. The multiplier effect will add an estimated 10.5 man-years per year of indirect and induced employment on an annual equivalent basis for the region. The construction phase of the project will provide about 163.5 man-years of direct employment during the installation period. The multiplier effect is expected to add another 257.6 man-years of employment during this period.

Secondary effects of the project include such things as the additional business generated in the food processing industries and the increased business in the commercial enterprises that supply goods and services to the agricultural industry. The change to more intensive agriculture will also generate increases in traffic, waste products, and demands on energy reserves.

The reduction of public health hazards will result in better living conditions on the farms throughout the problem area.

Monetary benefits and costs are summarized in Table 6 of the work plan, which is attached as Appendix A.

Favorable Environmental Impacts

1. Lowering of the high water table on 3,030 acres.
2. Improved physical condition of soil for better aeration and infiltration.
3. Improved crop root environment, reducing chances for plant diseases.
4. Removal from the soil of excess soluble salts which degrade the land, upset soil-plant-water relationships, and reduce choice, yield, and quality of crops.
5. Reduction of health hazards caused by wet basements, poor septic tank operation, and mosquito population increases.
6. Reduction in house foundation cracking and settling.
7. Increased crop yields and a return to more intensive agriculture.
8. Improved rangeland management.
9. Increased employment opportunities.
10. Improved income and living standards for farm families.
11. Provision of a suitable water supply for warm-water fish and suitable habitat for the rare giant garter snake along about 0.9 miles of new open channel.
12. Provision of plantings along 0.9 miles of new open channel, offering wildlife cover and improved fire control.

Adverse Environmental Effects

1. Contribution of about 8,000 tons of dissolved salts per year to the San Joaquin River.
2. Temporary removal of about 127 acres from production.
3. Temporary disturbances during construction.
4. Increased traffic, waste products, and demands on energy reserves resulting from more intensive agriculture.
5. Decreased quality of wildlife habitat resulting from more intensive agriculture.

ALTERNATIVES

Alternative Objectives

One alternative to the proposed project would be to change the land use from its presently deteriorating agriculture to a wetland wildlife preserve. This would involve the public acquisition of about 3,000 acres of land held in 58 parcels and the relocation of about 50 families. The cost of this would be about \$6,000,000. Additional water would have to be introduced as the area is not presently in wetlands. There are existing privately owned wetlands in the region that would be less costly to acquire, less disruptive to society, and more suitable for such development.

A second alternative would be to do nothing. The cropping pattern would continue to change to meet the restrictions imposed by the high water table. Monetary net benefits that would be foregone are estimated to be \$142,600 annually. Additional impacts would be a worsening of structural foundation problems, public health problems associated with poor septic tank operation and mosquito breeding conditions, and economic viability of the area. With lowering farm incomes or total abandonment, the appearance of the area would deteriorate as residents become financially unable or lose the incentive to maintain their properties.

Another alternative would be to postpone construction of the project until master drainage facilities become available. Public health conditions and other problems caused by the high water table would continue to worsen. Monetary net benefits that would be foregone by a ten-year delay are estimated to be about \$2,000,000; those foregone by a twenty-year delay are estimated to be about \$5,800,000.

Conservation land treatment measures alone would not solve the problem. Measures to improve land and water management cannot be applied until the water table is lowered. On-farm tile drains will lower the water table, but they must have adequate outlets. Pumps could be used for this purpose, but any such method of lowering the water table will require disposal of the effluent. In view of this, costs for a large number of individual pumping plants and outlet systems were not estimated.

Alternative Structural Solutions

Open drainage mains would require about 55,000 lineal feet of 10-foot deep channels. This would require about 65 acres of land for channels and an additional area required to dispose of about 400,000 cubic yards of excavated material. Installation cost would be about \$100,000 more than the cost of the selected alternative, and operation and maintenance cost would be about \$18,000 annually.

A pipeline could be used in place of the open channel and spoil bank. Easements would be used in place of the commitment of 11.5 acres of land to the channel. No fish or wildlife habitat would be provided. Other impacts would be the same as those of the

selected alternative. The installation cost of the pipeline would be about \$40,000 more than the cost of the selected alternative.

Alternative Disposal Methods

A reverse osmosis water desalting plant could be used to treat the drainage water. This would reduce the salt concentration in the water entering the river. Disposal of the brine would produce other impacts; their nature would depend on the method of disposal. The installation cost for such a plant would be about \$2,750,000. Land costs, site development costs, and costs of conveyance facilities, are not included in this figure. Annual operation and maintenance would be about \$60,000. The cost of disposing of the brine or salt produced by the process was not evaluated.

Drainage disposal by evaporation ponds would require about 1,000 acres of land which is not readily available. Installation cost would be about \$7,000,000. Mosquito control would be a continuing problem. The cost of this alternative and the number of relocations of persons and farm enterprises required would depend on the specific location of the ponds.

Another alternative would be to carry the effluent to the Kesterson Reservoir area for temporary storage. This would require several pumping stations and about 16 miles of pipeline. The effluent would be released to the San Joaquin River at times that would minimize its downstream effects. The power requirement for the pumping stations would be about 500,000 kilowatt hours per year. Installation costs for the pumps and pipeline would be about \$3,000,000, and operation and maintenance would average about \$40,000 per year.

Holding ponds could be constructed to provide temporary storage in or near the problem area. This would require about 560 acres of land. The effluent could then be released at times that would minimize adverse impacts downstream. The specific effects would depend on the method of operation. Installation cost would be about \$4,000,000. Relocations of persons and farm enterprises would depend on the specific site chosen.

SHORT-TERM VS. LONG-TERM USE OF RESOURCES

The lower portion of the watershed is agricultural land and is expected to remain agricultural. Installation of the project will bring about more efficient use of the land by permitting a return to production of the higher-valued crops which were previously grown in the area. The project will solve the water table problem without reducing the options for long-term uses. With proper maintenance, the project will continue to function beyond the end of its 50-year design life.

Within the California-South Pacific Water Resource Region, five Public Law 566 projects have been completed, and sixteen more are under construction. Two of the latter, the Mustang Creek and Patterson projects, are in the San Joaquin Basin Subregion. Objectives of the Mustang Creek project are flood prevention and wildlife habitat development. The Patterson project is similar to the Newman project, and involves subsurface drainage of about 4,000 acres about ten miles north of Newman. An application for assistance has been received by the Soil Conservation Service from the sponsors of the Dry-Schmidt Creek project, located east of the San Joaquin River about 50 miles southeast of Newman. The principal objective of this project is flood prevention. The 1968 Soil and Water Conservation Needs Inventory ^{19/} lists about 230 potential projects in the region and 25 in the subregion.

The New Jerusalem PL-566 project is located about twenty miles north of Patterson, and is presently under construction. This project provides subsurface drainage for about 12,300 acres. The project is located in the Delta-Central Sierra Subregion and discharges into the San Joaquin River.

The New Jerusalem, Patterson, and Newman projects will be required to meet the water quality standards established by the Central Valley Regional Water Quality Control Board. The standards are expected to be such that they will minimize cumulative adverse effects of these and other similar projects.

It has been estimated that about 240,000 acres in the San Joaquin Basin Subregion will require subsurface drainage by the year 2020. ^{20/} Much of this is upstream of the Kesterson Reservoir Area. The magnitude of the figure suggests that a regional solution to the problem will eventually become a necessity. Preliminary proposals for a regional approach have been discussed earlier in this statement. The proposed project is compatible with these proposals.

^{19/} U.S. Soil Conservation Service, Watershed Phase of the 1969 Soil and Water Conservation Needs Inventory, Berkeley, CA, August, 1969.

^{20/} California Regional Framework Study Committee, Comprehensive Framework Study, California Region, Appendix X, Irrigation and Drainage, prepared for the Pacific SW Inter-Agency Committee, Water Resources Council, June, 1971.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Approximately 11.5 acres of land, presently in native dryland pasture, will be required for the 0.9-mile-long reach of open channel. There will be no other permanent commitment of land except for the small areas occupied by appurtenances to the subsurface drainage system, such as the sump, risers and junction boxes.

An estimated average of 455 acre-feet of water per year will be required to dilute the drainage effluent. If master drainage facilities become available, this water would no longer be required.

CONSULTATION AND REVIEW WITH APPROPRIATE
AGENCIES AND OTHERS

General

Under the sponsorship of the Orestimba Resource Conservation District, the application for planning assistance under the authority of Public Law 566 for the Newman Watershed Project was approved by the State Resource Conservation Commission in November, 1967, and forwarded to the Secretary of Agriculture. In December, 1970, the Newman Drainage District was formally organized under state law and became a co-sponsor of the project. On the basis of a preliminary investigation report indicating project feasibility, the Administrator of the Soil Conservation Service authorized the project for planning in May, 1971.

Throughout the studies that led to this plan, consultive meetings were held with staffs of various agencies including the Corps of Engineers, Bureau of Reclamation, State Water Resources Control Board, and Central Valley Regional Water Quality Control Board. The project was also discussed with representatives of the Federal Water Quality Administration, the State Department of Water Resources, the State Division of Resource Conservation, and the State Reclamation Board. Project Steering Committee and/or Newman Drainage District meetings were held at least bi-monthly during the entire planning process. The Newman Drainage District Directors have met with the Stanislaus County Board of Supervisors, Stanislaus County Regional Planning Agency, and the Local Agency Formation Commission. In addition, the Newman Drainage District and the Orestimba Resource Conservation District have held three public hearings that were publicized in the Modesto Bee and local newspapers.

The National Register of Historic Places was reviewed, and the results of this review were included in the EIS and confirmed by the State Historic Preservation Officer. The Soil Conservation Service has complied with Section 106 of PL 89-665 and with Executive Order 11593.

Preliminary drafts of the Watershed Work Plan and Environmental Impact Statement were distributed for informal interagency review in October 1974. Comments were requested from the agencies listed below:

Local Agencies

Stanislaus County Board of Supervisors
Stanislaus Area Association of Governments
Central California Irrigation District

State Agencies:

Department of Food and Agriculture
Department of Health
Department of Conservation
Department of Fish and Game
Department of Navigation and Ocean Development
Department of Parks and Recreation (which includes the
State Historic Preservation Officer)

-33-

State Agencies (cont'd):

Reclamation Board

Department of Water Resources

State Water Resources Control Board

Central Valley Regional Water Quality Control Board

Federal Agencies:

Environmental Protection Agency

Corps of Engineers

Bureau of Outdoor Recreation

Bureau of Reclamation

Fish and Wildlife Service

National Park Service

Farmers Home Administration

Forest Service

Geological Survey

National Marine Fisheries Service

Department of Health, Education and Welfare

The comments of the various agencies led to some revisions of the reports.

Discussion and Disposition of Each Comment on Draft Environmental Impact Statement

The following agencies were asked to comment on the Draft Environmental Impact Statement (asterisks indicate those that responded):

- * Department of the Army
- Department of Commerce
- * Department of Health, Education, and Welfare
- * Department of the Interior
- * Department of Transportation
- * Environmental Protection Agency
- * Advisory Council on Historic Preservation
- Federal Power Commission
- Office of Equal Opportunity, USDA
- Secretary, Resources Agency of California
(Governor's Representative)
- * California Office of Planning and Research
(State Clearinghouse)
- * Stanislaus Area Association of Governments
(Areawide Clearinghouse)

The State Clearinghouse distributed copies to interested State Agencies and returned comments from the Department of Parks and Recreation and the Department of Water Resources. The Governor's representative did not comment on the impact statement but concurred with the Watershed Work Plan.

-34-

Comments received, and their disposition, are summarized below. Copies of all letters of comment may be found in Appendix B.

Comment: An archaeological reconnaissance was undertaken as part of the preparation of the draft EIS. The field work was done by Soil Conservation Service personnel who had received specialized training in cultural resource identification but who were not archaeologists. The Advisory Council on Historic Preservation and the Department of the Interior recommended that a qualified professional archaeologist be consulted. Arrangements were made to do this, and the comments of the State Historic Preservation Officer (State Department of Parks and Recreation) concurred with the decision to do so.

Response: The survey was completed and its results included in the final EIS. See page 17. A copy of the archaeologist's report was furnished to the State Historic Preservation Officer, whose concurrence is included in Appendix B.

Comment: The Department of the Interior suggested that the impact of land treatment measures on archaeological values be considered.

Response: At the present time the Soil Conservation Service believes that technical assistance to land users who are installing land treatment measures is not a "major federal action" which would require consideration under Section 102(2)(c) of the National Environmental Policy Act. However, in accordance with Section 101(b)(4) of NEPA, Service policy is to encourage land users to protect cultural values and to encourage them to notify the National Park Service if there is a possibility such values may be disturbed or destroyed.

Comment: The Department of the Interior advised that the San Joaquin kit fox is shown on its list as endangered, rather than rare.

Response: Although the Department of the Interior lists the kit fox as endangered, the State Department of Fish and Game lists it as rare. The EIS (page 17) has been revised to show both facts.

-35-

Comment: The Department of the Interior noted that the project could indirectly affect the 75 acres of Type 9 wetlands in the watershed, causing them to be converted to intensive agricultural use.

Response: This is possible. As noted on page 12, the wetland has developed within the last ten years and results largely from surface irrigation runoff. The impact of the project on the wetland is discussed under "Conservation Land Treatment" on page 24. This information is the same as it was in the draft EIS.

Comment: The Department of the Interior noted that an environmental quality plan was included in an addendum to the work plan, but not mentioned in the draft EIS. The Department suggested that the EIS include the EQ alternative.

Response: The Service's EIS guidelines call for an evaluation of alternative actions that might avoid some or all of the identified adverse effects of the project. The "abbreviated environmental quality plan" was prepared as an addendum to the watershed work plan under the phase-in procedures of the Water Resources Council's Principles and Standards for Planning Water and Related Land Resources. This EQ plan included the proposed plan plus some additional measures to further the objective of environmental enhancement. It was not intended as a proposal to avoid the adverse impacts of the proposed plan. Thus it was considered beyond the scope of the EIS.

Comment: The Environmental Protection Agency (EPA) noted a dearth of water quality data in the draft EIS. EPA suggested including additional data, if available, to support the estimate of 1,700 parts per million for the salinity of the drainage water.

Response: The estimate was based on available unpublished information from the State Department of Water Resources. We know of no other data for the Newman area at this time. Page 7 has been revised accordingly.

Comment: EPA noted an apparent discrepancy between the EIS, which shows the project contributing about 8,000 tons of dissolved salts per year to the San Joaquin River, and page 3-2 of the Watershed Work Plan, which shows 13,000 tons.

Response: Page 3-2 is part of an addendum to the Watershed Work Plan, and presents an alternative plan that includes tile drainage on about 5,000 acres. (See page 3-1 of the work plan for further discussion of the alternative.) The proposed plan is for a drainage system on about 3,000 acres, and the "Effects" section of the work plan shows a contribution of 8,000 tons. See page 31 of the work plan.

Comment: EPA contended that there was inadequate discussion of downstream effects. Page 25 of the draft EIS stated that the project would have a negligible effect on future downstream salinity because the salt outflow from the San Joaquin Basin was expected to increase to 2.4 million tons by the year 1990. EPA expressed interest in the assumptions behind the statement and asked whether these salts would all be carried by the San Joaquin River.

Response: The estimate of salt outflow was taken from a published report of the State Department of Water Resources. The magnitude of the figure indicates that a master drain will be required if water quality objectives for the river are to be met (see page 30 of the EIS). The conclusion that the project's long-term effect will be negligible assumes that effluent from the project will be carried in such a drain after it is completed. Page 19 of the EIS notes that the Regional Water Quality Control Board expects a master drain to be constructed. Attempts have also been made to arrange for the Newman Drainage District to use other drainage facilities when they become available. Thus, the proposed discharge to the river is envisioned as temporary. Page 8 of the EIS has been revised to show this.

Comment: EPA stated its belief that the specific issue of Delta effects had not been addressed. EPA also quoted parts of the EIS that said that specific effects of the project would depend on the policies adopted by the Regional Water Quality Control Board, suggesting that such statements were not adequate. EPA suggested that SCS assume some responsibility for the consideration of downstream and Delta effects.

-37-

Response: EPA's inference that the SCS is shifting responsibility is based on a misunderstanding. Under Public Law 566, sponsoring local organizations are responsible for project operation and maintenance. This includes compliance with all applicable laws and regulations. As indicated in the EIS, the Newman Drainage District will be responsible for meeting the criteria, policies, or requirements of the Regional Water Quality Control Board (see page 6). The discussion of impacts in the EIS presumes that these regulations will adequately protect water quality.

Comment: EPA noted that the full dilution effect would generally not occur until the effluent reached Orestimba Creek, and that the draft EIS did not discuss effects on water quality in the five-mile reach of river between the project's outlet and Orestimba Creek. EPA suggested some discussion be included of the effects on beneficial uses designated for the reach.

Response: Information on the effects on water quality in this reach has been added. Potential beneficial uses for various water bodies are designated in the Water Quality Control Plan Report for Basins 5A, 5B, and 5C. These are the three northern basins of California's Central Valley. The five-mile reach in question is part of a much larger reach of the San Joaquin River, extending from the mouth of the Merced River to Vernalis. This larger reach is identified as Surface Water Body Number 84 in the Water Quality Control Plan, and the plan designates a variety of potential municipal, agricultural, industrial, recreational, and fish and wildlife uses for this water body. There are no known users presently taking water out of the five-mile reach, and this has been noted in the final EIS. Effects on fish were covered in the draft. See page 25.

Comment: EPA questioned whether runoff from irrigation could properly be considered dilution water or whether it should be considered part of the existing flow in the river.

Response: The total dry-season discharge from the area includes both surface runoff of irrigation water and subsurface drain effluent. Irrigation water is the source of both types of flow. Facilities to collect the surface runoff and carry it to the river have already been constructed. At the time they were installed, it was envisioned that the irrigation runoff would be beneficial to river water quality and would mitigate the effects of the subsurface flows. The sponsors now propose to install facilities to collect the subsurface water. The EIS has been revised

to provide for a re-evaluation of dilution needs two to three years after the project is completed. See page 9.

Comment: EPA suggested that additional information be included on the degrees of responsibility for the problem, and made specific reference to the Delta-Mendota Canal and the irrigation of higher lands. EPA further suggested that SCS might examine the feasibility of having those responsible assist in the mitigation of the problem.

Response: The land treatment program will include measures to improve farming operations and land and water management, both within the problem area and on the lands above it. This should reduce the amount of subsurface water entering the problem area from higher lands (See page 23). The land treatment measures will be carried out by individual farmers with technical assistance from the Soil Conservation Service. In addition, the Bureau of Reclamation has indicated its willingness to allow the Newman Drainage District to use the San Luis Drain temporarily, after it is completed. See page 8.

Comment: The State Department of Water Resources advised that the California Aqueduct is open to fishermen as well as bicyclists.

Response: The information has been added. See page 17.

Comment: The State Department of Water Resources advised that no releases are being made from Kesterson Reservoir to the San Joaquin River.

Response: The statement, which appeared on page 19 of the draft EIS, has been removed.

Comment: The State Department of Water Resources questioned whether there was a conflict between the statement that dilution water will be obtained from the Central California Irrigation District and the statement that the District dewateres its canals during the winter.

Response: The context of the latter statement is the discussion of the fishery resource in the canals. The plan and EIS state that the dewatering of the canals limits the fishery resource. The Irrigation District has a number of canals

-39-

in the area and they will not all be dewatered while dilution water is being delivered.

Comment: The State Department of Water Resources questioned the accuracy of a statement in the Watershed Work Plan regarding future improvements in irrigation water quality.

Response: The statement has been removed from the final plan and EIS.

LIST OF APPENDICES

Appendix A - Comparison of Benefits and Costs
for Structural Measures

Appendix B - Letters of Comment Received on
Draft EIS

Appendix C - Figure 1

Appendix D - Project Map

APPROVED BY


State Conservationist

DATE APR 5 1976



TABLE 6 - COMPARISON OF BENEFITS AND COSTS FOR STRUCTURAL MEASURES

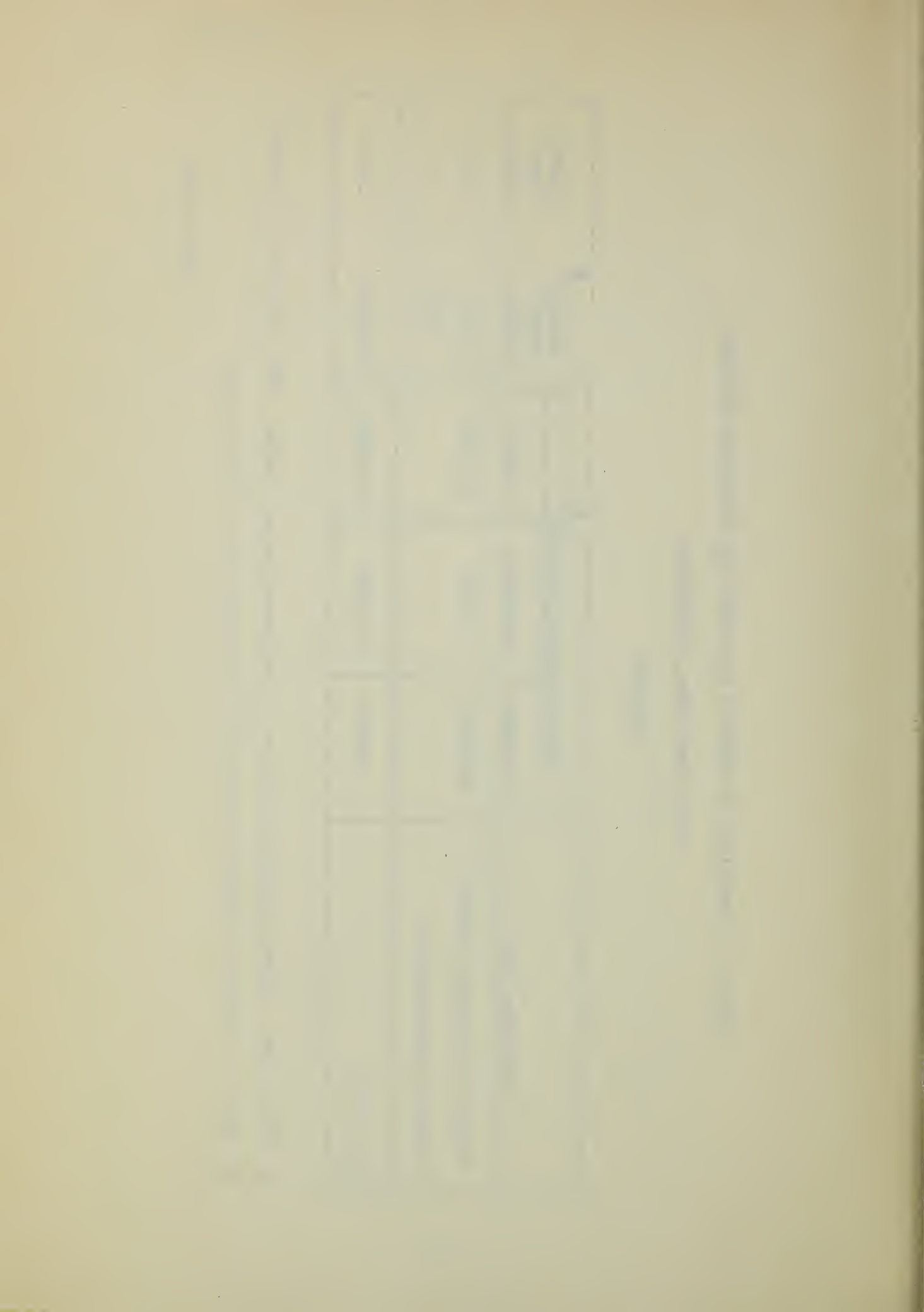
Newman Watershed, California

(Dollars)

Evaluation Unit	<u>1/</u> AVERAGE ANNUAL BENEFITS			<u>2/</u> Average Annual Cost	Benefit Cost Ratio
	Drainage	Secondary	Total		
Project Structural Measures	\$160,600	37,000	197,600	51,000	3.9:1
Project Administration				4,000	---
GRAND TOTAL	160,600	37,000	197,600	55,000	3.6:1

1/ Price base: Current normalized prices for crops and pasture values, 1974 prices for all others.2/ Based on a 50-year evaluation period and an interest rate of 6-7/8 percent.

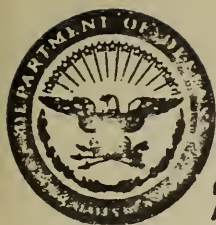
April 1976.



APPENDIX B

Letters of Comment Received on the
Draft Environmental Impact Statement





REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS
630 Sansome Street, Room 1216
San Francisco, California 94111

SPDPD-F

25 July 1975

Mr. G. H. Stone
State Conservationist
Soil Conservation Service
U. S. Department of Agriculture
P. O. Box 1019
Davis, California 95616

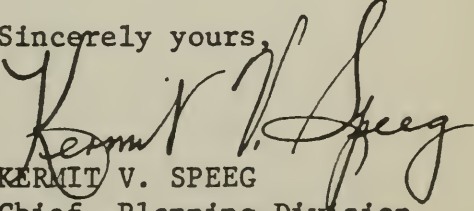
Dear Mr. Stone:

This letter provides the coordinated Corps of Engineers Division and District review response on your Draft Watershed Work Plan and Draft Environmental Impact Statement for the Newman Watershed in Stanislaus County, California.

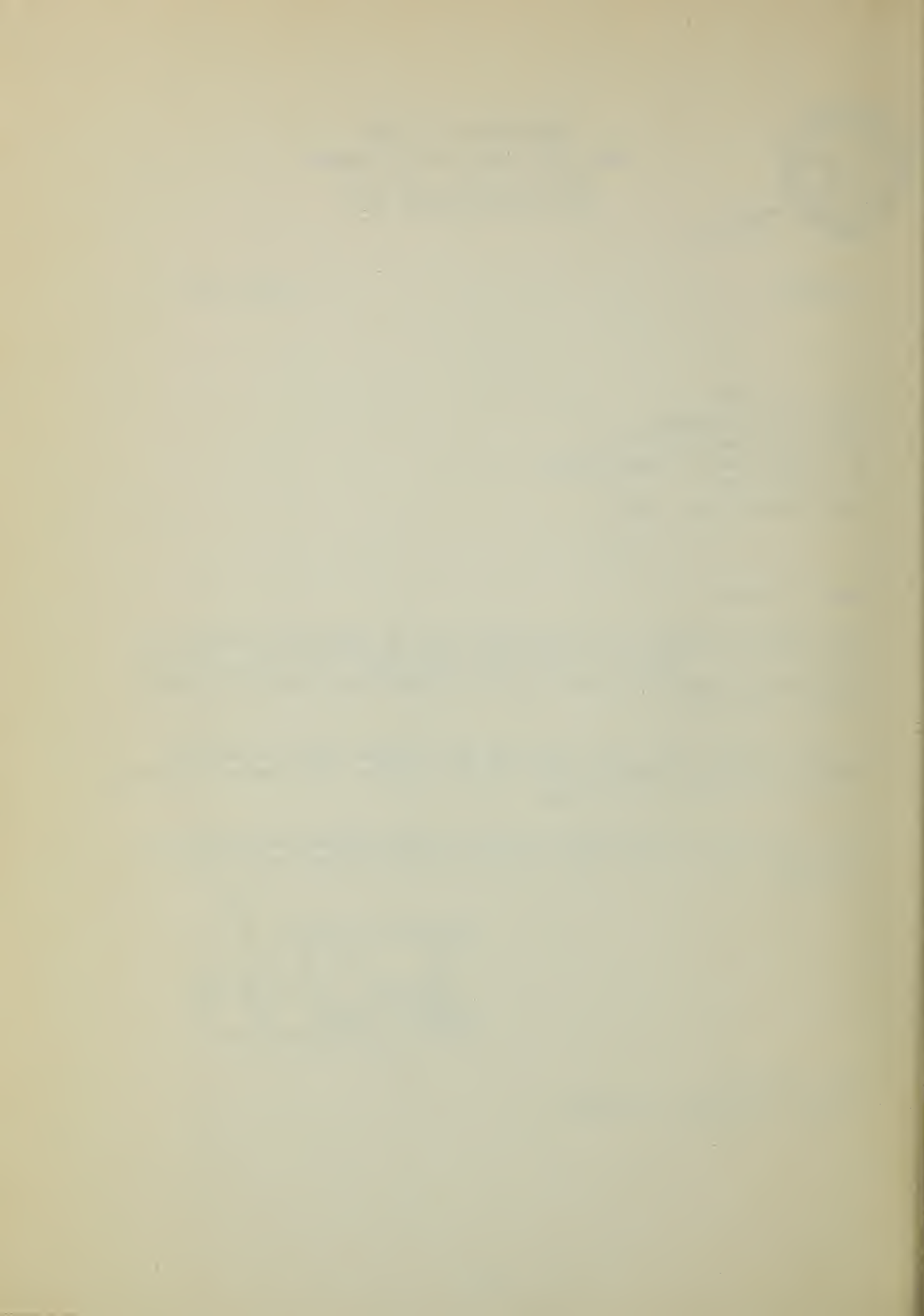
We have reviewed the draft work plan and EIS and find our earlier comments have been incorporated into the reports. We have no additional comments to offer at this time.

This office and our Sacramento District office would both appreciate receiving copies of the Final Watershed Work Plan when they become available.

Sincerely yours,


KERMIT V. SPEEG
Chief, Planning Division

Copy furnished:
District Engineer, Sacramento
ATTN: SPKED-W





DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
REGIONAL OFFICE

50 FULTON STREET
SAN FRANCISCO, CALIFORNIA 94102

OFFICE OF
THE REGIONAL DIRECTOR

Office of Environmental Affairs

July 2, 1975

G. H. Stone
State Conservationist
Soil Conservation Service
Dept. of Agriculture
P.O. Box 1019
Davis, California 95616

Dear Mr. Stone:

The Draft Environmental Impact Statement for the Newman Watershed Project, Stanislaus County, California has been reviewed in accordance with the interim procedures of the Department of Health, Education and Welfare as required by Section 102(2)(c) of the National Environmental Policy Act, PL 91-190.

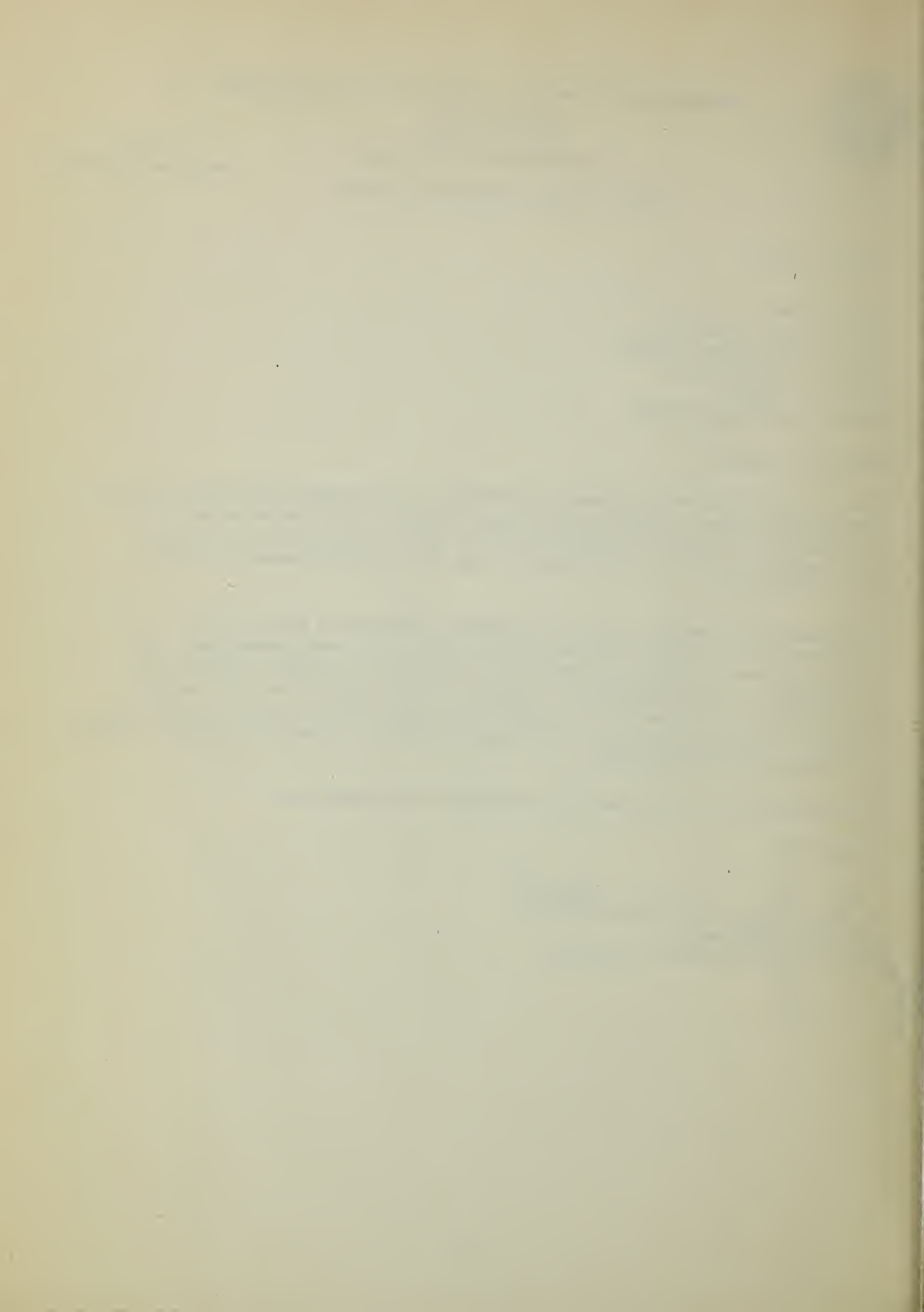
The material provided appears to describe adequately the impacts of the proposed action as well as the alternatives that were presented. The major concerns of this department are related to possible impacts upon the health of the population, services to that population and changes in the characteristics of the population which would require a different level or extent of services. Our review does not identify problems related to these specific concerns.

The opportunity to review this statement was appreciated.

Sincerely,

Evelyn Wachtel
James D. Knochenhauer
Regional Environmental Officer

cc: CEQ
OEA





UNITED STATES
DEPARTMENT OF THE INTERIOR

OFFICE OF THE SECRETARY

PACIFIC SOUTHWEST REGION

BOX 36098 • 450 GOLDEN GATE AVENUE

SAN FRANCISCO, CALIFORNIA 94102

(415) 556-8200

ER-75/493

July 10, 1975

Mr. G.H. Stone
State Conservationist
Soil Conservation Service
P.O. Box 1019
Davis, California 95616

Dear Mr. Stone:

The Department of the Interior has reviewed the draft environmental statement and watershed work plan for the Newman Watershed, Stanislaus County, California.

Environmental Statement

We suggest the final statement include a copy of the comments sent by the State Historic Preservation Officer regarding the project's impact upon properties either listed on or in the process of nomination to the National Register of Historic Places. Also, all areas where surface disturbance is likely to occur with the project should be surveyed for archeological resources. Since the scope of work includes a variety of land treatment measures, we suggest that impacts on archeological resources be considered in the environmental statement. If the precise location of this land treatment is not available, other methods of predicting probable impacts are possible. The development of an archeological overview or a systematic sampling may indicate the potential density of cultural resources which exist and may be affected.

The San Joaquin kit fox (page 16) is referred to as a rare species. Actually it is included on the United States List of Endangered Fauna, U.S.D.I., May 1974.

The proposal would not directly affect 75 acres of Type 9 wetlands. However, a secondary effect could result from draining surface water by ditches and then of high ground water by the installation of tile drains. If this occurs, these wetlands would be converted to intensive agricultural use.

The environmental quality plan is one alternative for the development of this area's resources. It provides for objectives in addition to those of the selected plan and increases the size of the project area. It is summarized in an addendum to the draft watershed work plan (page 3-2) but is not mentioned in the draft statement. All of the alternatives for the project area should be evaluated. We feel the draft environmental statement is incomplete without inclusion of the EQ plan.


Work Plan

We note that the archeological reconnaissance (page 10) was conducted by Soil Conservation Service personnel who had received specialized training. We recommend that the identification and evaluation of cultural resources be done by, or under the direction of, a qualified professional archeologist. Since any actions designed to prevent damage or destruction of cultural resources are predicated on the identification and evaluation of such resources, it is important that a competent professional direct all field investigations.

Since Federal assistance, both technical and financial, will be made available (pages 36 and 37), we recommend that the impact on cultural resources be fully considered in the environmental statement. Until professional input documents the presence or absence and significance of cultural resources in the area, there can be no meaningful assessment of the total impact on such resources.

We appreciate the opportunity to review and comment on the draft environmental statement and watershed work plan.

Cordially,



Webster Otis
Special Assistant to the Secretary

cc: OEPR w/c incoming comments
Regional Director, FWS, Portland
Regional Director, BOR, San Francisco
Regional Director, NPS, San Francisco
Director, GS, Reston
Director, BOM, Washington, D.C.
Regional Director, Bureau of Reclamation, Sacramento



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS:
U.S. COAST GUARD (G-WS/73)
400 SEVENTH STREET SW.
WASHINGTON, D.C. 20590
PHONE: (202) 426-2262

17 JUN 1975

Mr. G. H. Stone
State Conservationist
Soil Conservation Service
P. O. Box 1019
Davis, California 95616

Dear Mr. Stone:

This is in response to your letter of 22 May 1975 addressed to Commandant, Coast Guard concerning a draft environmental impact statement for the Newman Watershed, Stanislaus County, California.

The Department of Transportation has reviewed the material submitted. We have no comments to offer nor do we have any objection to this project.

The opportunity to review this draft statement is appreciated.

Sincerely,

R. I. PRICE
Rear Admiral U. S. Coast Guard
Chief, Office of Marine Environment
and Systems





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX
100 CALIFORNIA STREET
SAN FRANCISCO, CALIFORNIA 94111

Mr. G. H. Stone
U.S. Department of Agriculture
Soil Conservation Service
P.O. Box 1019
Davis, CA 95616

AUG 13 1975

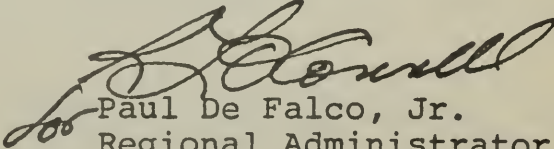
Dear Mr. Stone:

The Environmental Protection Agency has received and reviewed the draft environmental statement for the Newman Watershed Project, Stanislaus County, California. This review is prepared in conjunction with a review of the draft Watershed Work Plan of December 1974.

EPA's comments on the draft environmental statement have been classified as Category ER-2. Definitions of the categories are provided on the enclosure. The classification and the date of EPA's comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act. Our procedure is to categorize our comments on both the environmental consequences of the proposed action and the adequacy of the environmental statement.

EPA appreciates the opportunity to comment on this draft environmental statement and requests one copy of the final environmental statement when available.

Sincerely,


Paul De Falco, Jr.
Regional Administrator

Enclosures

cc: Council on Environmental Quality



COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

NEWMAN WATERSHED PROJECT

STANISLAUS COUNTY, CALIFORNIA

It is indicated in the draft EIS (page 24) that, "The total dissolved solids content of the drainage effluent is expected to be about 1,700 parts per million." EPA finds a dearth of water quality data presented in the draft EIS. EPA is interested in if water quality data are available for the drainage effluent. It is suggested that if data are available, the information should be included in the final EIS.

There is a paradox between information presented on the expected effects of the drainage effluent. In the draft EIS it is indicated that the proposed action will contribute about 8,000 tons of dissolved salts per year to the San Joaquin River. In contrast, in the Watershed Work Plan (page 3-2) under the section Environmental Effects, "Addition of about 13,000 tons per year of dissolved salts to the San Joaquin River," is indicated. EPA is interested in if the discrepancy is due to different estimates of drainage effluent quantity or quality. In addition, since the difference in estimates is greater than 50 percent, will the conclusions in the draft EIS regarding dilution requirements remain the same?

EPA contends that there is inadequate discussion on the effects the proposed project will have on downstream salinity and the Delta. In the draft EIS (page 25) it is stated, "Under future conditions, the project's contribution to downstream salinity will be negligible as the annual salt outflow from the San Joaquin Basin is expected to increase to about 2.4 million tons by the year 1990." EPA is interested in the assumptions being made regarding this statement. While the annual salt outflow may be 2.4 million tons, does this outflow represent amounts of salt which will be carried by the San Joaquin River?

In addition EPA believes that the specific issue of Delta effects has not been addressed. The draft EIS indicates that the actual effect of the project (on the Delta) depends on the amount of dilution water used, "...which in turn will depend on the policies adopted by the Regional Water Quality Control Board." It is further stated (page 25), "The project's potential contribution to degradation of...the Delta will be limited because these policies will consider such effects." EPA suggests that in relation to the proposed project, it is appropriate that SCS assume some responsibility for the consideration of downstream and Delta affects.

In relation to the previous comment, EPA suggests that additional consideration be given to the water quality and associated effects in the reach of the San Joaquin River between the discharge point and Orestimba Creek (approximately a 5 mile river stretch). This reach is of particular concern since the maximum dilution effect will not occur until the effluent reaches Orestimba Creek. It is noted that information presented on page 7 shows more than 60 percent of the dilution water enters from Orestimba Creek. EPA suggests that expected salinity values be presented for the indicated reach under pre-project and post-project conditions, and that discussion be included of the effects on beneficial uses designated for this reach of river.

On pages 6 and 7 of the draft EIS there is discussion on the use of surface runoff from irrigation as dilution for the drainage effluent. It is stated, "These discharges are not expected to decrease appreciably during the life of the project because irrigation efficiencies in the area already approach maximum attainable values." In view of this statement, EPA is interested in the basis of SCS's conclusion that this can be considered as dilution water. It is suggested that the final EIS consider whether this water already constitutes a portion of the existing flow in the river and, therefore, could not be considered dilution.

On page 20 under the section Water and Related Land Resource Problems there is a discussion which alludes to the responsibility of the subsurface drainage problem in the Newman Watershed:

"When the Delta-Mendota Canal was constructed in the early 1950's a large area of higher land lying west of the problem area was brought under irrigation. In addition, Delta-Mendota water was used to replace water from many of the wells and pumping from these wells ceased. This resulted in a resumption of the rise of the ground water table."

EPA suggests that additional information be included on the degrees of responsibility for the problem. In addition, if major responsibility can be established, it is suggested SCS might examine the feasibility of having those responsible assist in the mitigation of the problem.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

100 CALIFORNIA STREET

SAN FRANCISCO, CALIFORNIA 94111

Mr. G. H. Stone
State Conservationist
Soil Conservation Service
P.O. Box 1019
Davis CA 95616

MAR 18 1976

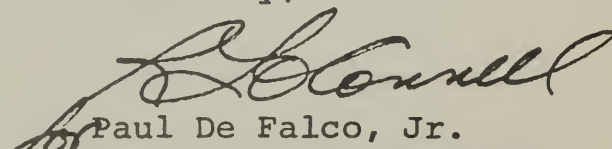
Dear Mr. Stone:

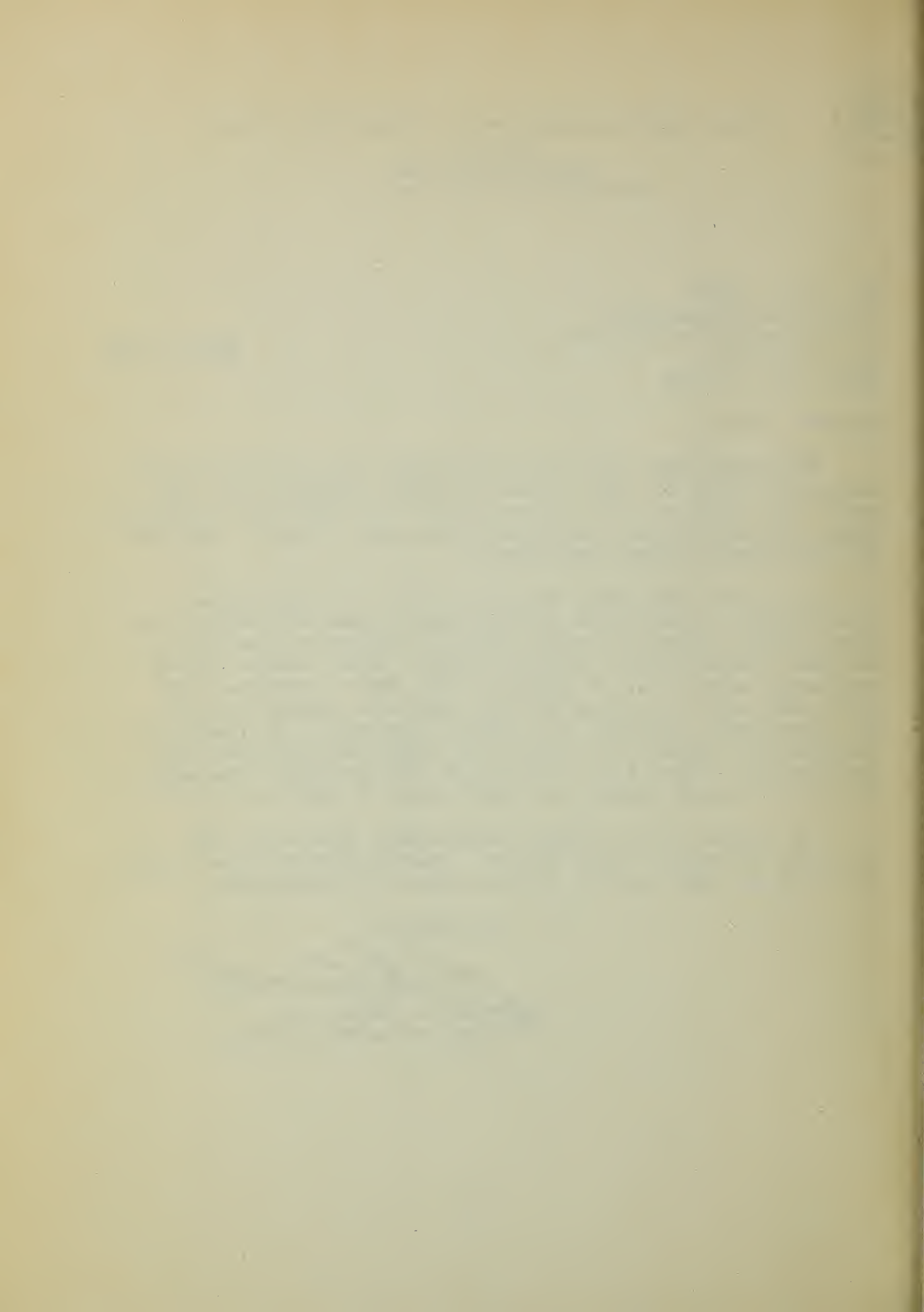
The Environmental Protection Agency has received your letter of March 1, 1976, which includes responses to comments EPA submitted in the review of the Draft Environmental Impact Statement for the Newman Watershed Project, located in Stanislaus County, California.

EPA rated the Draft EIS ER-2 (i.e., environmental reservations, inadequate information), with the major concerns being related to water quality concerns relative to the San Joaquin River, and the Delta. Upon review of the responses submitted, it appears that EPA's concerns have been addressed. In view of the responses submitted, EPA is tentatively changing our rating from ER to LO (lack of objections) subject to all of the required provisions appearing in a Final EIS. Therefore, EPA reserves the opportunity for final comment in the review of the Final EIS.

If we can be of further assistance, please do not hesitate to contact this Office. Please submit three copies of the Final EIS to this Office when it is available.

Sincerely,


for Paul De Falco, Jr.
Regional Administrator



Copy of Letter from

ADVISORY COUNCIL ON
HISTORIC PRESERVATION

June 20, 1975

Mr. G. H. Stone
State Conservationist
Soil Conservation Service
U.S. Department of Agriculture
P. O. Box 1019
Davis, California 95616

Dear Mr. Stone:

This is in response to your request of May 22, 1975 for comments on the draft environmental statement (DES) and Watershed Work Plan (WWP) for the Newman Watershed, Stanislaus County, California. Based on the Advisory Council's review of the DES and WWP it would appear that no properties included in or eligible for inclusion in the National Register of Historic Places will be affected by the proposed undertaking.

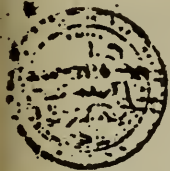
However, the Council is somewhat concerned about statements in these documents which indicate the cultural surveys of the project area were not conducted by professional archeologists, but rather by "Soil Conservation Service (SCS) personnel who had received specialized training in cultural resource identification and recording through the U.S. Forest Service". The Council is familiar with the purposes of the Forest Service training program, and it is our understanding that the results of surveys conducted by non-professionals should be reviewed and approved by a professional archeologist. Therefore, the Council suggests that the final environmental statement contain evidence of a professional archeologist's approval of the referenced survey.

Should you have questions or require additional assistance in this matter, please contact Michael H. Bureman of the Council staff at P. O. Box 25085, Denver, Colorado 80225, telephone number (303) 234-4946.

Sincerely yours,

Signed

Louis S. Wall
Assistant Director, Office of
Review and Compliance



State of California

GOVERNOR'S OFFICE

OFFICE OF PLANNING AND RESEARCH

1400 TENTH STREET

SACRAMENTO 95814

MUNO G. BROWN JR.

GOVERNOR

July 21, 1975

Mr. Walter J. McInnis
1011 Parker
P. O. Box 1129
Tracy, CA 95376

SUBJECT: SCH 74121645 NEWMAN WATERSHED PROJECT

Dear Mr. McInnis:

This is to certify that State review of your federal grant application and/or environmental impact report is complete.

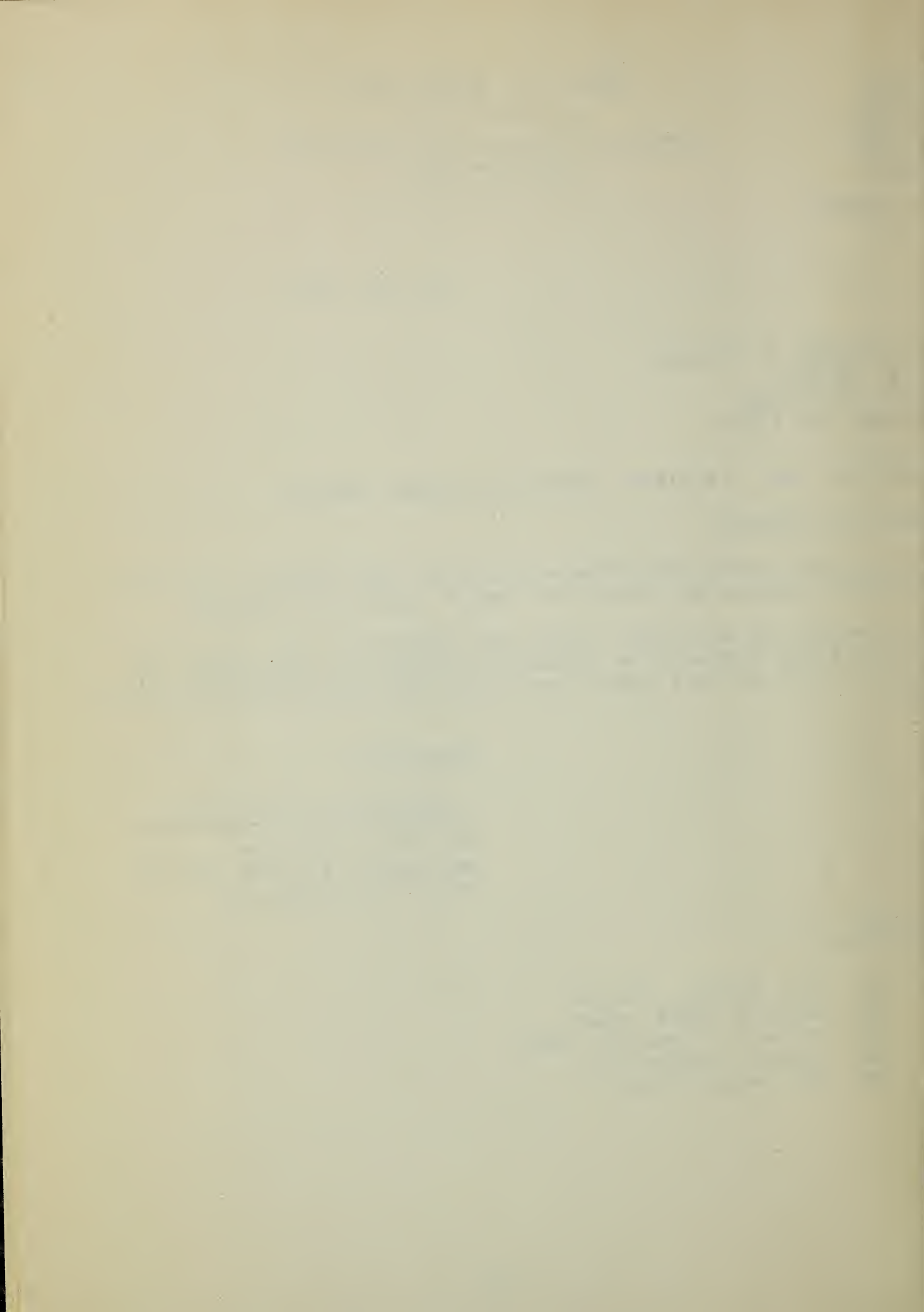
The results of the State review are attached. You should respond to the comments as required by Office of Management and Budget Circular A-95 and/or the California Environmental Quality Act.

Sincerely,

William G. Kirkham
Management Systems Officer
State Clearinghouse

WGR/mcd
Attachments

cc: Ms. Mary Schell, LIBRARY
Mr. Doyle D. Dodd, SAAG
Mr. Russell W. Porter, DP&R
Mr. James L. Welsh, DWR
Mr. Ray Dunham, SWRCB



Memorandum

Date : June 25, 1975

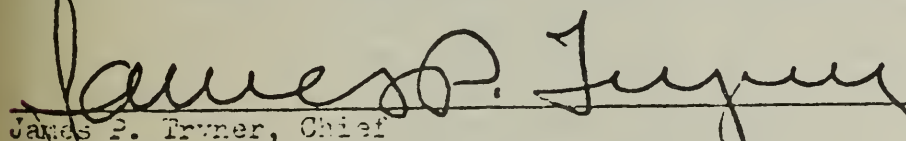
Subject : SCH#74121645 Newman
Watershed Project
Stanislaus CountyTo : Mr. James P. Tryner, Chief
Resource Management and Protection Division

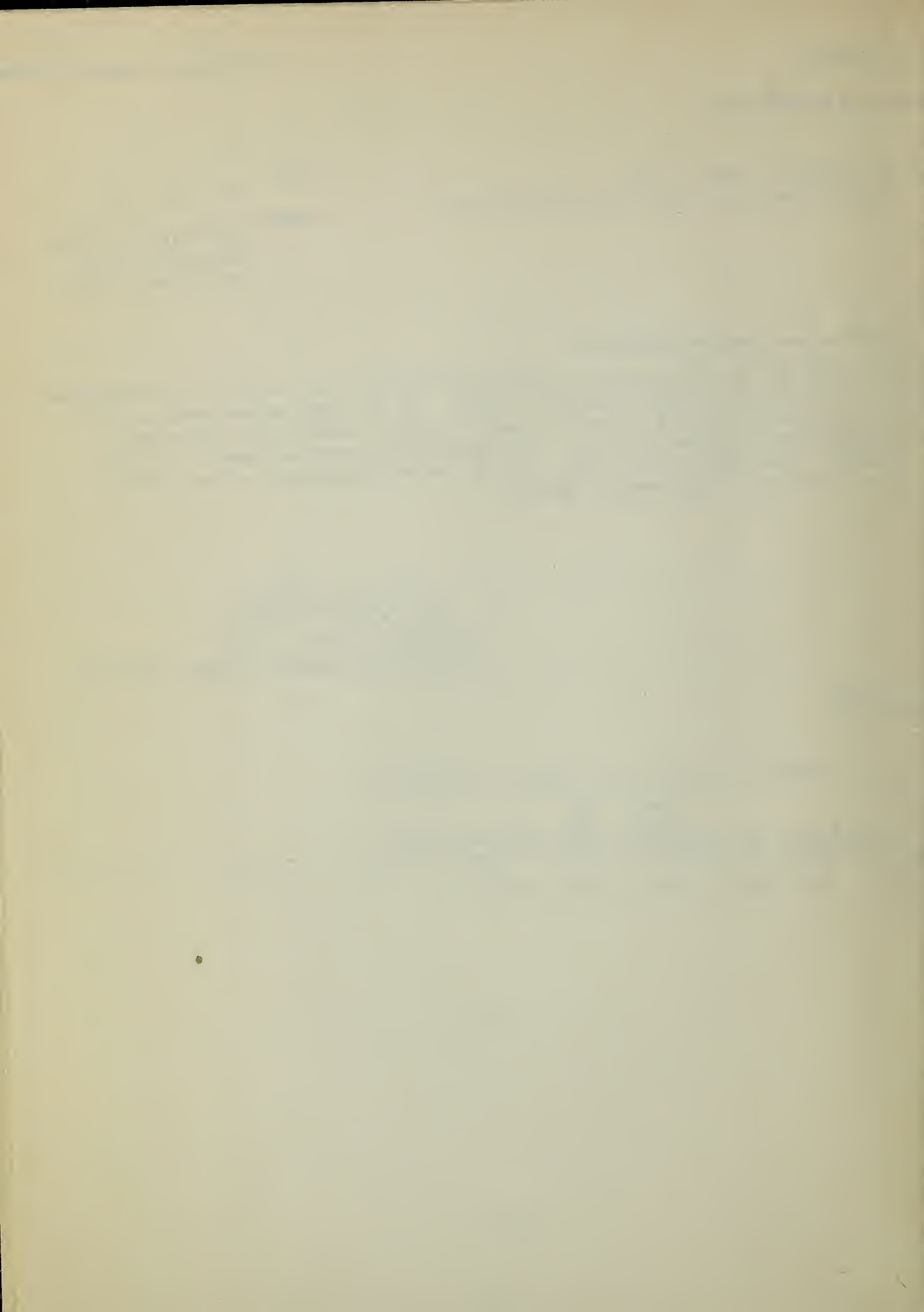
from : Department of Parks and Recreation

The Staff of the State Historic Preservation Officer has reviewed the Watershed Work Plan for the Newman Watershed Project. It is their understanding that the Soil Conservation Service is going to employ a qualified professional archeologist to survey the area of potential environmental impact for this project. The staff concurs that this is a most appropriate action on the part of the Soil Conservation Service.

Russell W. Porter, Chief
Grants and Statewide Studies DivisionP-2/4320
RWP:WCS

OFFICIAL COMMENTS, DEPARTMENT OF PARKS AND RECREATION.

James P. Tryner, Chief
Resource Management and Protection DivisionRECEIVED
JUL 21 1975
CHIEF OF DIVISION
STANISLAUS COUNTY



DEPARTMENT OF WATER RESOURCES

COMMENTS

SCH #74121645

We have reviewed the draft "Watershed Work Plan, Newman Watershed" and our comments are as follows. All of the comments, with the exception of the comment referring to page 10, were transmitted at the time the preliminary report and EIS were reviewed but were either ignored or inadequately answered in this report.

Page 10, Recreation Resources. It should be noted that the California Aqueduct is open to fishermen as well as bicyclists.

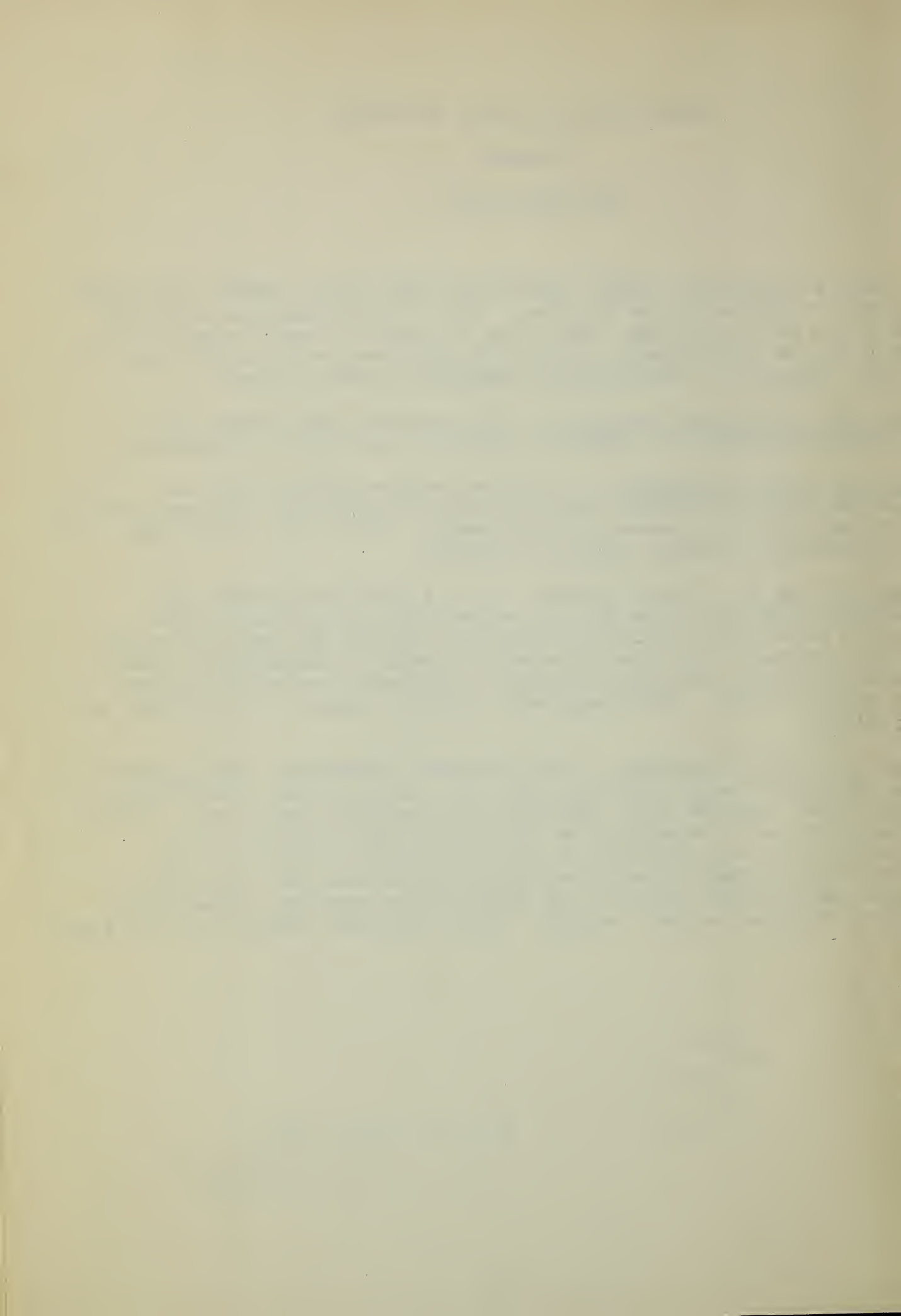
Page 14, Third Paragraph. It is our understanding that no releases are being made from Kesterson Reservoir to the San Joaquin River and future releases (approximately 1990) will enter the Sacramento-San Joaquin Delta at Antioch.

Pages 25 and 53. There appears to be a conflict between the statement that 455 acre-feet of water will be purchased from Central California Irrigation District during the period October through December and the statement on page 9, paragraph 2, which states that the Irrigation District dewateres its canals during the winter months. This apparent conflict should be rectified or explained.

Page 38, First Paragraph. The statement concerning improvements in the irrigation water quality that will occur as the "California Water Plan" reaches full operation is somewhat confusing. If the statement is in reference to the State Water Project, it is doubtful that any significant improvement will occur in the District's irrigation water with full operation of the project since import water used in the District is supplied through the federal Central Valley Project. This statement should be clarified.

RECEIVED
JUL 21 1975
CHIEF OF DIVISION
PLANNING

C. A. McCullough, Chief
Statewide Planning Branch
Division of Resources Development
Department of Water Resources



DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 2390
SACRAMENTO 95811
(916)445-2358



October 23, 1975

Mr. G. H. Stone,
State Conservationist
Soil Conservation Service
Post Office Box 1019
Davis, California 95616

Dear Mr. Stone:

Thank you for your letter of September 25, 1975 on the Newman Creek Watershed Project in Stanislaus County.

After reading the Archeological Survey Document and reviewing our records, I and my staff concur that this undertaking will not affect any properties included on or eligible for inclusion on the National Register of Historic Places.

I thank you for your promptness and am glad to see that you understand your obligations under 36 CFR Part 800 should construction uncover any previously unidentified resources.

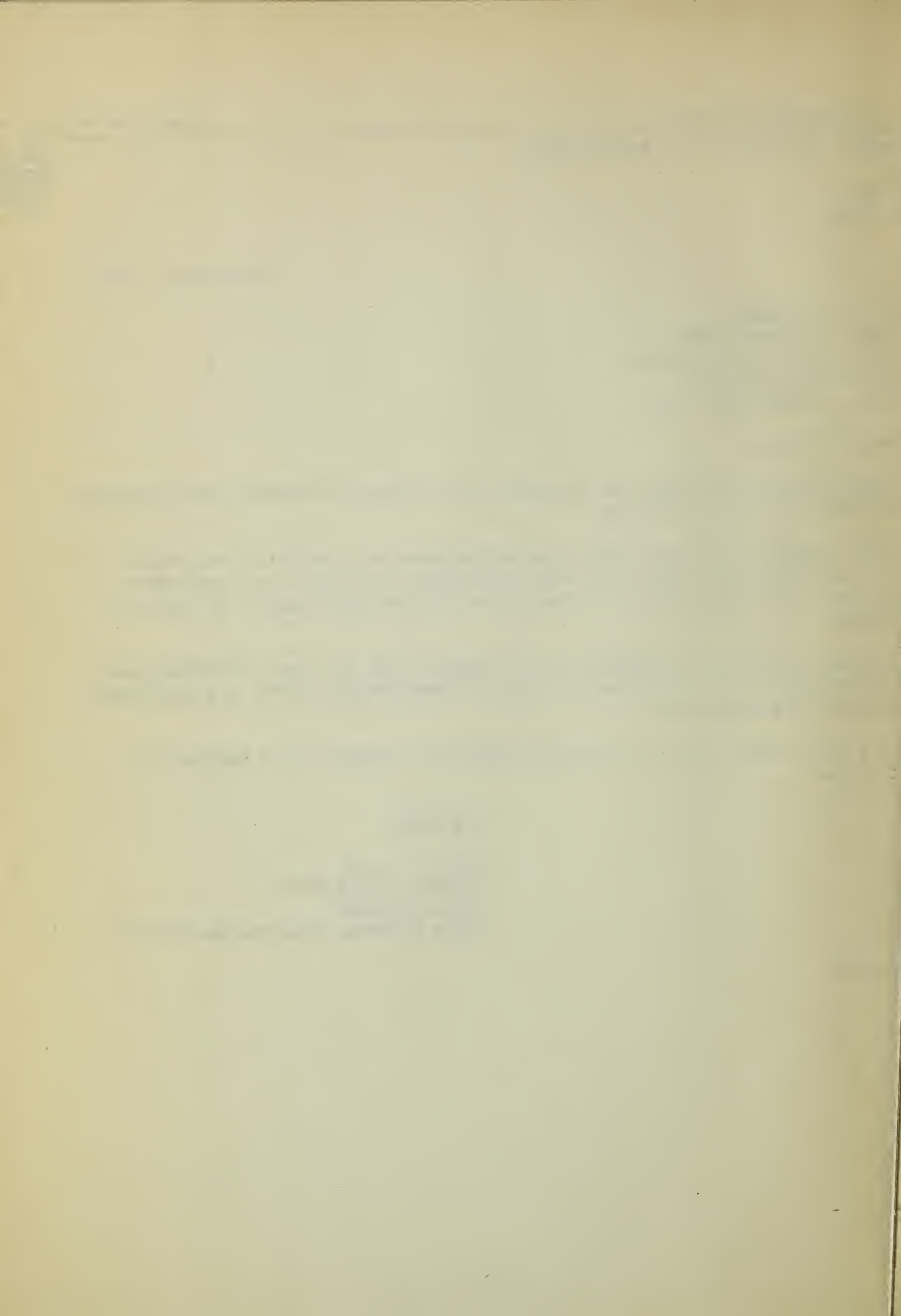
If I or my staff can be of further assistance, please do not hesitate to call us.

Sincerely,

A handwritten signature in dark ink, appearing to read "Herbert Rhodes".

Herbert Rhodes
State Historic Preservation Officer

P-2/996





Stanislaus Area Association of Governments

June 3, 1975

JURISDICTIONS

Stanislaus County

City of Ceres
City of Hughson
City of Modesto
City of Newman
City of Oakdale
City of Patterson
City of Riverbank
City of Turlock
City of Waterford

G. H. Stone
U. S. Soil Conservation Service
Post Office Box 1019
Davis, California 95616

RE: NEWMAN WATERSHED PROJECT - EIS AND WORK PLAN

The Stanislaus Area Association of Governments recognizes the need for the subject project throughout the west side of this county.

The project plans are consistent with the Water Section of the Stanislaus Area Environmental Resources Management Element, which was adopted by the Association on February 13, 1974.

The EIS and Work Plan are currently being distributed to concerned County agencies for further comment.

Sincerely,

Dennis Brighton

Dennis Brighton
Clearinghouse Officer

DB/sh

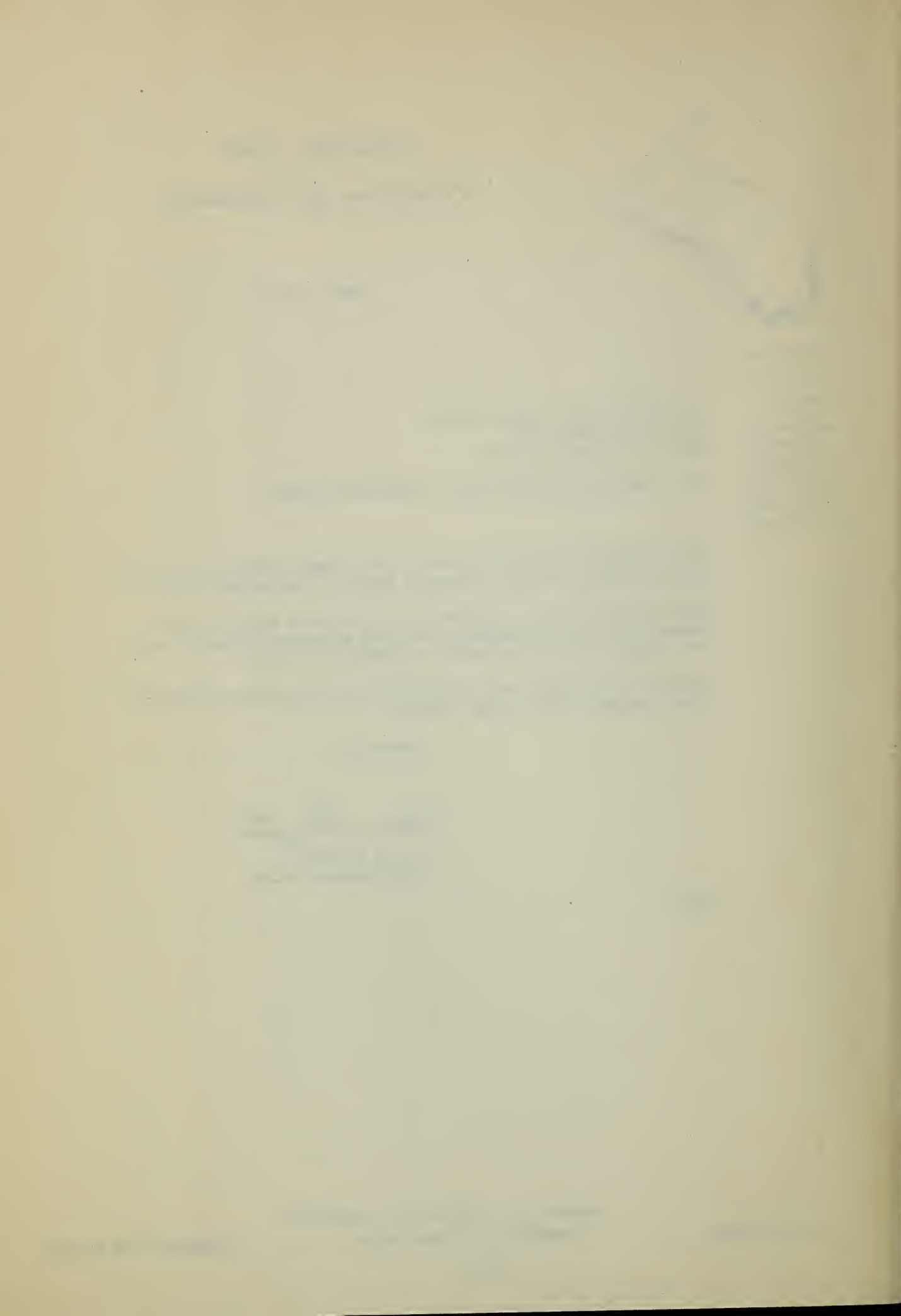
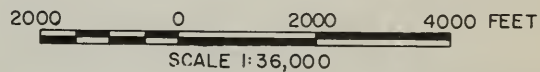




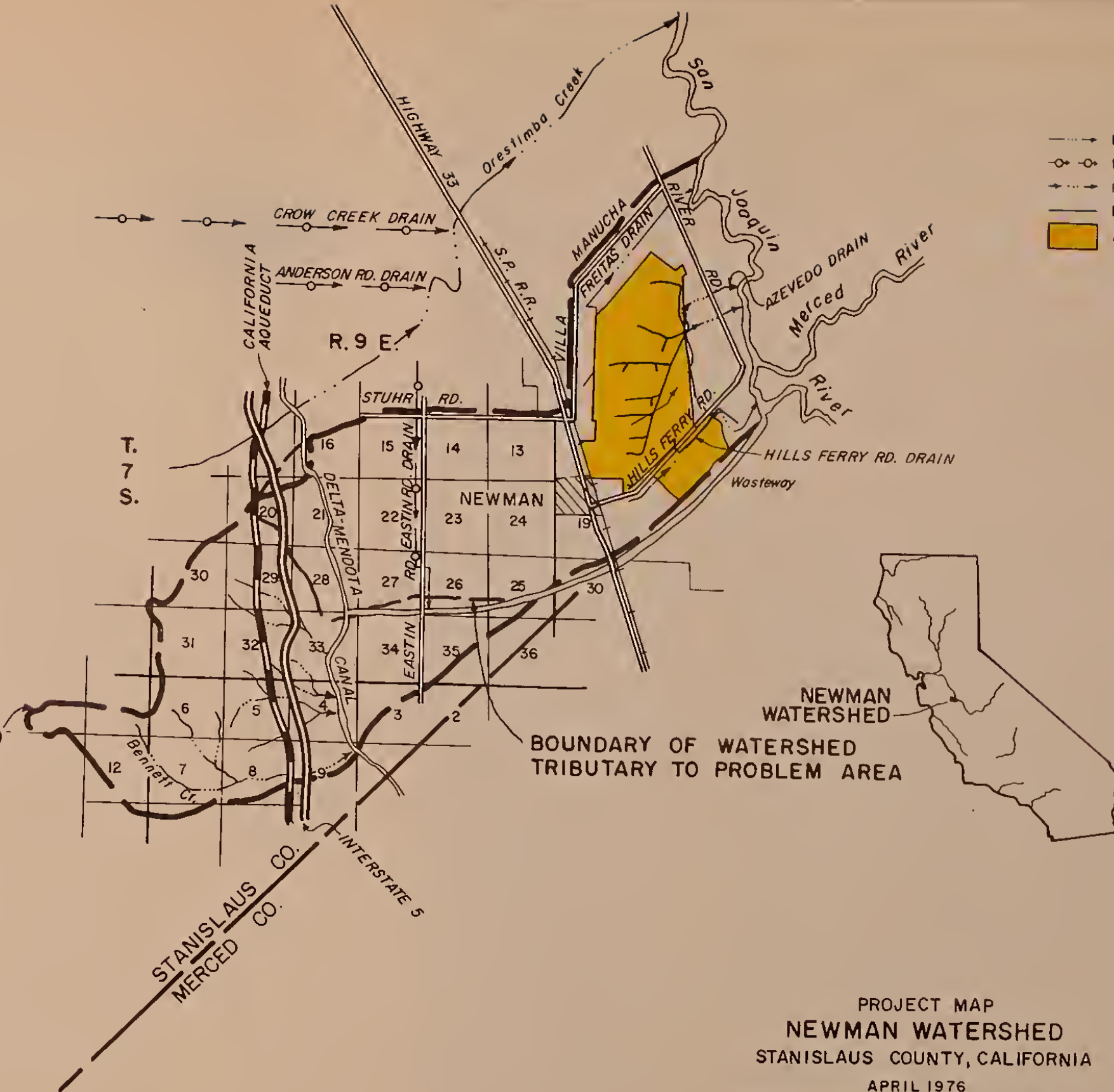
FIGURE 1
WORK PLAN
DRAINAGE SYSTEM
NEWMAN WATERSHED
STANISLAUS COUNTY, CALIFORNIA
APRIL 1976







WATERSHED
BOUNDARY

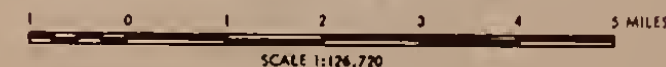


LEGEND

- Existing Drain Ditch
- Existing Drain Pipe
- Proposed Open Channel
- Proposed Sub-Surface Drain
- Area Benefited

PROJECT MAP
NEWMAN WATERSHED
STANISLAUS COUNTY, CALIFORNIA

APRIL 1976





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SOIL CONSERVATION SERVICE